AN INFORMATION SYSTEM FOR THE
MANAGEMENT OF NAVY PROCUREMENT

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MANAGEMENT OF NAVY PROCUREMENT

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Bachelor of Arts

San Francisco State College, 1963

A Thesis Submitted to the School of Government and

Business Administration of the George Washington

University in Partial Fulfillment of the

Requirements for the Degree of

Master of Business Administration

January, 1971

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TABLE OF CONTENTS

Chapter

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Managers of procurement organizations are currently beset by an increasing emphasis being placed upon the quality and quantity of statistical data concerning management and contractual information originating in their respective organization. Budgeting limitations coupled with increased workload requirements have forced procurement managers to investigate the adequacy of the management information systems they are using for planning, operations, and control. Problems of accumulation, digestion, and dissemination of data concerning buyer performance, contract and contractor information, prior, during and after award are monumental in scope. The solution to these problems is an integrated procurement information management system with inputs both external and internal to the procurement organization and an interface capability with existing and proposed uniform automatic data processing procedures.

Currently each procurement organization in the Navy Department is an autonomous unit operating independently in its design and implementation of procurement management information systems. A multitude of systems have been developed both manual and automated in an attempt to gain greater and faster knowledge concerning the operation of their respective procurement organization. These management information systems vary in complexity from a visual check and manual recording of data to vast computer programs able to generate large volumes of management information simultaneously and even create a procurement contractural document when inventory reaches predetermined levels.[1] Thus, to more effectively manage a procurement organization within the Navy Department, be it a remote purchasing activity in a foreign country, or a procurement organization engaged in the acquisition of major weapons systems at the military headquarters command level, the process of accumulation of data accurately and rapidly becomes paramount.

Weding and Diamond indicate that the procurement function has consistently lagged behind other phases of industry and Government in the application of modern management techniques.[2]

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[1] Achelleas E. Kollios and Joseph Stempel, _Purchasing and EDP_, (New York: American Management Association, 1966), pp. 69-90.

[2] J. William Weding, Jr. and C. Gerald Diamond, "Buy by Computer", Harvard Business Review, (March-April, 1964), pp. 109-120.

They further indicate that if the procurement organization does possess modern management tools, it is often a by-product of an existing automated system, usually operated and controlled by another department, i.e., accounting. Commander A. E. Kollios, in support of Weding and Diamond, feels that the procurement organization should design, operate and control the system so as to obtain the type of information important for effective procurement management and so as not to be bound by other departments, systems, or parameters.[1] Within the Navy Department both types of systems are in effect and will be discussed.

Purchasing in general has been hampered by tradition. Procurement managers over the years have convinced top management of the uniqueness of the procurement function; that is, that it is not at all akin to the repetitive nature of the production line. Also, the procurement organization has traditionally been delegated to a minor position in the plant hierarchy, being attached generally to the production department, thus being at the bottom of the list for available resource allocation after accounting, inventory control, and production.[2]

Purchasing, in general, has been hesitant to apply modern data processing techniques to their organization because

[1]Achelleas E. Kollios, Commander, Supply Corps, United States Navy, private interview held in Washington, D. C., October, 1970.

[2]Weding and Diamond, "Buy by Computer." pp. 109-120.

of a lack of knowledge as to their benefit, limitation and possible application.

Scope

The procurement function can be thought of as consisting of three distinct functions: (1) the pre-solicitation function, (2) the solicitation-award function, and (3) the post-award contract administration function.[1]

The pre-solicitation function originates with the procurement planning that takes place between the initiators of the procurement requests, contracting personnel, and other support personnel. All of these people are essential in the achievement of The Department of Defense's procurement mission, i.e., timely delivery of the required quality of materials or services for the best price.[2]

A successful pre-solicitation function, if formally advertised, utilizes a solicitation package known as an invitation for bids (IFB). Requests for proposals (RFP) or requests for quotations (RFQ) are used in negotiated procurements and are also the final results of the pre-solicitation function. Therefore, the solicitation packages have to be of such a detailed nature that no doubt exists in the mind of the

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[1]U. S. Department of Defense, Procurement Training Handbook, (Washington, D. C.: Government Printing Office, 1968), pp. 1-17.

[2]Ibid.

perspective vendors when they are bidding, proposing or quoting prices and delivery dates to Government contracting officers.

The solicitation-award function is the process of actual delivery to and receipt from perspective vendors at the solicitation package. After receipt of the solicitation package, the contract is then awarded to the lowest responsible bidder.[1] Government contracts are awarded by way of a formal written notice to the successful vendor. All unsuccessful vendors are also notified that the award has been made but are not necessarily told the successful vendor and price. This information is made public at the time of bid opening.

The other phase of contracting is that of the post-award function. The post-award contract administration function is required to protect the Government's interest contractually. For example, major weapons system acquisition contracts are of such complexity that the Government cannot afford for the vendor not to produce or not to deliver the required item. Therefore, the Government plays an active role in assuring contract performance through the contract administration function.

This thesis is concerned primarily with an investigation of existing procurement management information systems utilized by the Navy, pertaining to the pre-solicitation and solicitation-award functions rather than the post-award contract

[1]Ibid., p. IDi.

administration function. An indepth study of various methods

currently employed by Navy procurement organizations for

controlling and monitoring procurement requests as they are

transcribed into contractual documents will provide the vehicle

for analyzing the types of procurement management information

systems employed to accomplish these functions. This

investigation of a representative sample of information

systems will give an indication of the diversity and scope

of the data required by these activities in the management of

their respective organizations.

Problems that are encountered in the acquisition of

procurement information and why managers consider this data

important also falls within the scope of this thesis. The

area of concern of this thesis is graphically displayed in

Figure 1 below:
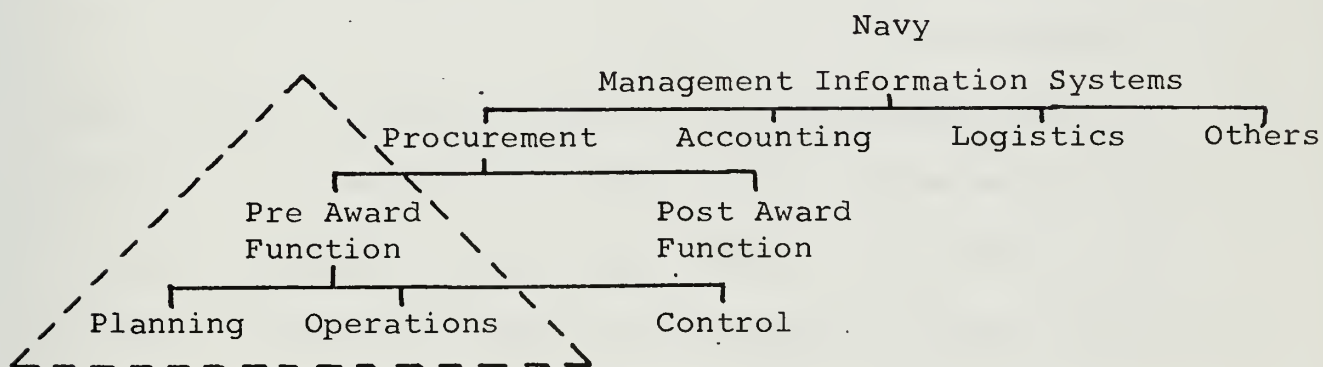
Figure 1
Areas of Concern

Two major problem areas experienced by procurement managers which this thesis attacks are how to measure buyer performance and how to reduce the amount of routine work buyers or contracting officers have to perform.

> "One of top managements most persistent problems is to evaluate the performance of the purchasing function. The problem has resisted solution for one fundamental reason. Management has not sufficiently complete and reliable data with which to measure purchasing performance."[1]

> "Most buyers have so much routine and clerical work to do they must neglect their more important creative function, i.e., one-fourth to one-third on routine tasks."[2]

Purpose and Utility

The purpose of this study is to investigate the magnitude of the procurement data explosion, the various kinds of procurement management information systems currently available and the impact of these upon contracting officers within the Navy Department.

The utility of this study lies in the development of a procurement management information system applicable to procurement organization within the Navy Department having automatic data processing capabilities. By utilizing the concepts formulated in the proposed model, a uniform automatic data processing system could be developed. Or, the model

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[1]Weding and Diamond, "Buy by Computer," p. 114.

[2]Ibid., p. 111.

could be taken in total and utilized by those procurement
activities currently which do not possess an expanded
management information systems.

Research Questions

Evidence indicates a lack of agreement among naval
procurement organizations as to the scope of management
information necessary for effective management. The purpose
of this thesis will be to study the primary research question:
"What are the management information requirements to effectively
control and appraise the U. S. Navy's procurement organization
and operation?" Toward this end, the following subsidiary
research questions will be answered:

1. What is the scope of the procurement information
    problem?

2. What problems are encountered in obtaining adequate
    management information within the purchasing
    organization?

3. What methods are currently employed by purchasing
    organizations within the Navy Department for the
    collection of procurement information?

4. Can ADP be more effectively applied in the
    management of Navy purchasing activities?

Methodology

The primary and subsidiary research questions will be discussed and analyzed using information obtained from:

1. Personal interviews with Government representatives involved in procurement management, planning and control.

2. Government training manuals, instructions, and circulars.

3. Journal and magazine articles.

4. Government memorandums.

Both inductive and deductive reasoning will be necessary to arrive at a conclusion as to the type of procurement management information systems which could be used by the Navy buying activities.

Organization

The organizational scheme is built around the proposed procurement management information system model. Principles and concepts discussed in each chapter are utilized for both model building and answering the primary and secondary research questions.

Chapter II briefly describes management information systems. This chapter is general in nature covering such areas

as the history of management information systems, size of the

present information explosion, the characteristics of information,

and the cost of information. Chapter III lists the problems

procurement managers have both in the acquisition and evaluation

of data. The different missions of the various levels of

procurement activity within the Navy are discussed, along with

staffing, training, manpower management, data file creation and

maintenance, plus interface problems with existing uniform

management information systems.[1] Chapter IV is a brief description

of three different procurement management information systems.

A proposed model for a procurement information system forms

the framework for Chapter V.

Chapter VI presents the summary and conclusions along

with recommendations resulting from the research.

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[1]Systems having Navy as well as Department of
Defense wide application.

CHAPTER II

MANAGEMENT INFORMATION SYSTEMS

Information System Approach

The term Management Information System (MIS) has gained acceptance in the business world, but its scope and application seem to be misunderstood by many. It can best be described as a completely integrated system for gathering, transmitting, and processing data into information for storage and retrival by the entire organizational unit. Management Information Systems can also be thought of as a means by which management can analyze and evaluate organizational and individual performance against established standards or policies. It is designed to provide necessary management information for evaluation and decision-making concerning the operation, supervision and evaluation of an organizational unit. The information system consists, therefore, of recorded information, people who maintain and organize the collected data, established retrieval procedures and the users of the information.

Mathematics, engineering, behavioral science, plus many other recognized formal disciplines form the basis of the information system approach.

Professor Kenneth Boulding indicates that the jest of a general system theory is to establish a body of systematic theoretical constructs which reflect the general relationships of the imperical world.[1]

The information system approach can be thought of as a systematic method of observing, analyzing, evaluating, and modifying an organization or any part or segment of an organization.[2] This approach is an attempt to bring understanding and logic to the many elements that comprise modern organizational units operating in various environments.

One of the major problems facing managers today is that of the information and paper work explosion. There are between 35,000 and 50,000 technical periodicals containing 2,000,000 technical articles published annually throughout the world, and this number is increasing at the rate of six per cent per year.[3] Before investigating the cause of this explosion and

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[1]Kenneth E. Boulding, "General Systems Theory-The Skeleton of Science," Management Science, Vol. II, (April, 1956), p. 197.

[2]Thomas R. Prince, Information Systems for Management Planning and Control, (Homewood, Illinois: Richard D. Irwin, Inc., 1966), pp. 7-8.

[3]Morton F. Meltzer, The Information Center, (New York: American Management Association, 1967), p. 12.

how purchase managers can hope to control and contain this
emerging giant, like the modern scientist have tamed the force
of atomic explosives in the reactors to produce electrical
power, a basic understanding of terms is paramount. What is
data? How does data differ from information? The concepts
of data and information are often confused.

The word "data" literally means "fact". But this basic
definition is quite limiting and constricting. Data also can
be considered raw material, the facts so to speak, that are
imported to a management system, be it either the modern system
utilizing high speed electronic processing equipment or a manual
system employed by small firms in the collection of data or
statistics. Data, being a raw material, requires processing
before it becomes useful and meaningful. Our space satellites
broadcast back to earth millions of "bits" of data during the
course of their scientific mission, but this data is meaningless
unless processed through a decoder which translates these
electrical impulses into a useable form. Thus, business data,
like that of the scientist, is merely facts which may or may
not be useable in their present form to be of any immediate
value to the manager.

Information is knowledge derived from the raw material
input after it has been properly processed and assessed.

Therefore, data becomes information when some sort of
evaluation is made and a judgement achieved. The main distinction
between data and information is that information consists of
data bits or elements, but not all data will give meaningful
information. Meaningful information is required if a manager
is going to properly manage and control his organization.

In order for managers to have meaningful information,
the input data must possess the characteristics of quality,
quantity, and timeliness.[1] If for any reason the data used as
the basis for the information system contains any of the
characteristics of poor (or inaccurate) quality; that is, if
it is incomplete or out of date, the resulting management
information will be of limited value as an effective management
tool.

The value of any information processing system is that
it has been designed specifically to meet the needs of the
particular organization. A data processing system is simply a
conversion unit which takes raw facts or statistics as an
input and produces meaningful information as an output. Today's
modern society immediately conjures up vivid pictures of vast
computer complexes to supply this meaningful management
information, but an information system does not require

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[1]Donald H. Sanders, Computers in Business, (New York:
McGraw-Hill Book Co., 1968), p. 3.

computers, punched cards, or any special types of electronic equipment.

The concept of information systems is not new. Briefly, modern information systems contain data from various inputs, both external and internal to the organization. The system integrates this new data with previously stored information and thus provides a frame of reference for future data and for decision-making. Information systems are not unique to modern man; evidence of information systems have been traced as far back as recorded history.

Since about 2000 B.C., when the Code of Hammuralic came into existence, businessmen have been concerned with gathering statistical information with regard to their business. Information gathering in ancient time was, of course, not as extensive as today and was confined to accounting, communications or a code, all of which still constitute information systems. Hammuralic said, "If the merchant has given to the agent corn, wool, oil or any sort of goods to traffic with, the agent shall write down the price and hand over to the merchant; the agent shall take a sealed memorandum of the price which he shall give to the merchant."

Thus, this basic law indicated a data collection system. Merchants would gather and tabulate and balance their books, so

to speak, and in this way they were processing the data which would lead to some form of decisions on the part of the merchant. During Hammuralic's time, the information collected by the merchant while performing the record-keeping process was also used for control and planning purposes.

One reason historians are able to trace information systems back as far as 4000 B.C. was that a strict business code was used during those times to record every purchase of any significance, all wills, marriage settlements, etc. Permanent records were established by pressing cuneiform characters into clay cylinders which have survived the ravages of time.

> "In 1494, Luca Pacioli, a famous man of the time, developed a treatise on double entry bookkeeping. In it he stated the following need for cash, the two most necessary requirements in business are (1) to be both good bookkeeper and mathematician, and (2) 'to arrange all transactions in a systematic way that one may understand each one at glance.'"

Another information system of historic note is that which was employed in the middle 1500's by a German businessman who commanded a vast business empire from China to Paris. He required each of his branch offices to submit secret reports indicating trends and happenings in their area of responsibility. These reports often took the form of our present-day newsletters, the only major difference being the speed of transmission of

the data or information whichever the case.

Today's information requirements are much more complex than those of 300 or 400 years ago because of the increasing complexity of modern industry and the vast increase in the need for information. David Sage indicates five major reasons for this vast increase in business system complexity. Those reasons are as follows:

(1) division of labor

(2) automation

(3) capitalism

(4) transportation

(5) communication.[1]

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[1] David M. Sage, "Information System: A Brief Look Into History," Datamation, (November, 1968), p. 64.

Information System Use

To maximize effectiveness, an information system should achieve the following:

"It should adhere to the organizations creeds, policies, and objectives while satisfying the individualistic needs of the administrators who use it.

The information system should identify the vital items of information that affect results of the organization and those that have little or no impact on achieving desired objectives.

The system should, where possible, provide the administrator with measures of risk and uncertainty and facilitate administrative evaluation of risk and uncertainty."[1]

Information-processing systems perform two types of functions that is, they perform an operational function and an administrative function. The operational function includes such activities as work load scheduling and inventory management.[2] The administrative function consists of supplying management with information it requires to make administrative decisions.

Some operations of modern industry can be extremely automated, allowing information systems to control them completely through a feedback loop of the operation. Feedback is a

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[1]Edward A. Tomeski, *The Computer Revolution*, (London: The MacMilliam Co., 1970), p. 84.

[2]Lamar Lee, Jr. and Donald W. Dobler, *Purchasing and Materials Management*, (New York: McGraw-Hill Book Company, 1965), p. 547.

comparison of a given action against a standard for that

action. An information system will respond whenever an action

varies from the standard, will indicate the amount of variance,

and, if the system is automatic, will make the necessary

adjustment to bring the action back to standard. Feedback is

a dynamic activity making corrections as it maintains the

systems equilibrium.

In performing administrative functions an adequately

designed information system supplements the managers observations

and experiences by supplying him with selected information he

can use to make administrative decisions and yet not overwhelming

him with supervisor information that requires decoding or

further processing. To achieve this, most information systems

follow the management by exception principle. This principle

has been traced as far back in history as biblical times where

Jethro says to Moses in Exodus 17:22, "......that every great

matter they shall bring unto thee, but every small matter they

shall judge......" in this way, attention is directed toward

chosen information rather than to a mass of information.

Various approaches can be used to establish parameters for

choosing or selecting the type and volume of information desired.

One method is through the expansion or contraction of upper and

lower limit parameters. Another is the comparison of actual

actions against planned or standard actions; that is, when

variations reach or exceed a given bench mark, the manager is

alerted to take some form of action.

Managers employing the exception principle coupled with

modern computer technology can greatly reduce their paper work

flow because performance that meets pre-established standards

can proceed without management intervention.

Information Characteristics

Edward A. Tomeski indicates that information systems

possess such general features as content, a time scale,

presentation methods, and structure.[1]

Content

The content of an information system includes both

an internal and an external system.[2] William B. England gives

a brief description of the internal flow of information to

the purchasing organization in Figure 2 below:

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[1]Tomeski, Computer Revolution, p. 82.
[2]Ibid.
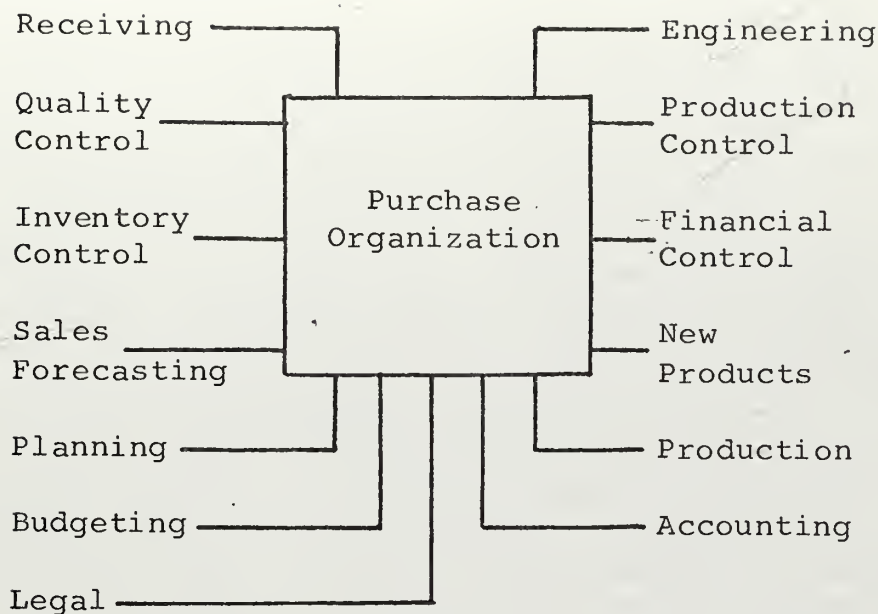
Figure 2
Internal Information Systems

* Wilbur B. England, <u>The Purchasing System</u>, (Homewood, Illinois: Richard D. Irwin, Inc., 1967), p. 122.

By changing the terminology from sales forecasting to budget forecasting, England's model of internal information flowing to the purchasing organization is applicable to Government procurement. The planning organization provides purchasing with the necessary information used in the preparation of long-term future requirements for such things as facilities, materials, services, and weapon systems.[1] Adequate planning is important in light of fiscal constraints imposed by Congress.

"Procurement should start its planning well in advance of the fiscal year by holding a meeting, or series of meetings, with the offices or agencies that participate in the 'buy' decision. In the major buying organizations

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[1]<u>Ibid.</u>

such as the AFSC division, NavWeps, and NavShips, procurement management should be told what items are going to be bought, how many of them will be bought, and how the programs will be funded. (Approximately how many dollars will be available? Will the totals be released all at once or incrementally?) Obviously, the amount and detail of information available will vary from procurement to procurement, and will change -- perhaps several times -- as plans become more definite. Procurement's own recommendations may bring about revisions, too. Since this reprogramming process may have an unsettling effect on intermediate-and working-level personnel, planning should be restricted to the highest levels of the procurement organizations until it becomes firm. As soon as this happens, however, procurement managers should see that the information is made available to the men who will be working with it."[1]

Purchasing is concerned with receiving an external flow of information; that is, information from sources outside the procurement organization.[2] The various forms of external information are not limited to those illustrated in Figure 3, but, Figure 3 does represent a valid cross-section of the types of information external to procurement organizations.

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[1] U. S. Department of Defense, The Defense Management Review Program, Program Manual, (Washington, D. C.: Government Printing Officer, 1962), p. 58.

[2] England, Purchasing System, p. 123.

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General                                    New
Market                                     Product
Conditions                                 Information

                    ┌─────────────────┐
Sources of          │   Purchasing    │    Suppliers
Supply              │                 │    Capacity
                    │                 │
                    │                 │
Suppliers           │  ·Organization  │    Sales and
Production          │                 │    Use and
Rates               │                 │    Taxes
                    │                 │
                    └─────────────────┘
Labor                                      Prices and
Conditions                                 Discounts


Procurement                                Transportation
Information                                Availability


Transportation
Rates
```
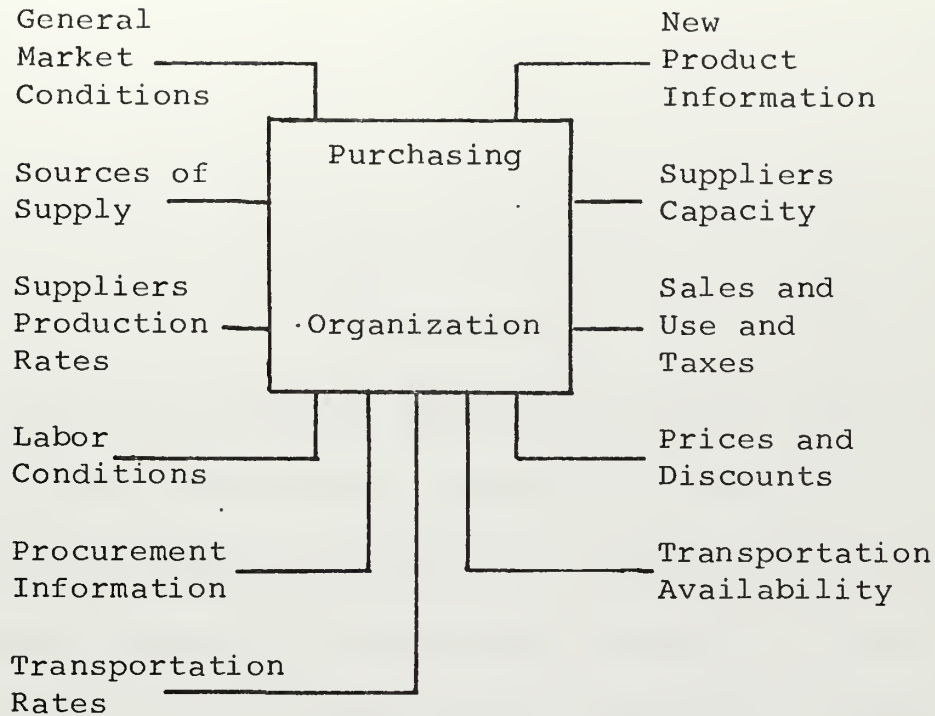
Figure 3
External Information Systems

* Wilbur B. England, <u>The Purchasing System</u>, (Homewood
Illinois: Richard D. Irwin, Inc., 1967), p. 124.

Time scale

Information systems must provide for both historical

and current information as well as some method of forecasting

usable information.[1]   Procurement organizations are concerned

with historical information such as material history,

requisition, reports, price history, vendor performance, and

buyer performance, to name just a few.[2]   There is some overlap

of historical and current information in the requisition files.

Requisitions remain active from the time they are received

until the material has been paid for, remaining in the current

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[1]Tomeski, <u>Computer Revolution</u>, p. 83.

[2]England, <u>Purchasing System</u>, p. 128.

files for future reference if required. Current information
required by the procurement organization includes, but is not
limited to, such files as the open requisition, vendor
performance, buyer performance and bidders' lists.[1]

Presentation

Adequately designed information systems should provide
for both formal and informal displays of information.[2] Tomeski
indicates that formal information is information that has been
given legal status by the controlling organization and is
usually recorded in a formal manner. "Informal information is
unrecorded and in a sense unofficial, but sometimes very
important."[3]

Computer technology can display output information by
writing the information on punched cards, paper tape or magnetic
tape, by printing the information on paper or by utilizing
visual display devices such as cathode ray electronic tubes.[4]
Most procurement information management systems in use by Naval
procurement organizations have arranged the computer format to

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[1] Ibid.

[2] Tomeski, Computer Revolution, p. 82.

[3] Ibid.

[4] John Dearden, Computers In Business Management,
(Homewood, Illinois, Dow-Jones-Irwin, Inc., 1966), p. 47.

correspond to that of required monthly reports. When output

information is in this format, the print-out can be submitted

directly to higher authority rather that first having to be

transcribed onto a particular form. Appendix I, (DD1057)

along with Appendix II, (DD350) form the basic output requirements

for a procurement management information system.

Cathode ray display devices allow for rapid inquiry as

to the particular status of desired data but have a disadvantage

in that they provide no record of the inquiry. It is, however,

a formal display of information, indicating current information

at the time of inquiry. It, therefore, can be thought to be

in terms of real-time[1] vice the time passed reflected in normal

printed reports or listings.

Structure

A meaningful and flexible information system must cause

information first of all to be generated, then transmitted,

then received and subsequently utilized.[2] Information systems

structured in such a way as to be flexible allow the organization

to react to internal, external and changing organizational

pressures and conditions. Oliver W. Tuthill indicates

information technology today is experiencing a fantastic rate

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[1] "A real-time system is one where: (a) information is stored on random access equipment; (b) the information is updated frequently enough to be considered correct at all times; and (c) the information can be retrieved as quickly as needed;" From John Dearden, Computer in Business, p. 275.

[2] Tomeski, Computer Revolution, p. 82.

of change in contrast to the time of the industrial revolution where business assumed a laissez-faire attitude toward the general welfare of the society it served. Today, pressures of competition, political concern for the public interest, and current anti-pollution action groups force those managers and organizations who have delayed or ignored the changing times to learn and grow with the changing environment. "In short, a more sophisticated management is essential as the momentum of socio-economic change continues to increase."[1]

Several factors contribute to this fantastic rate of change currently being experienced by modern industries. These factors affect the Navy's procurement organizations both directly and indirectly by bringing about changes in price, delivery schedules and performance characteristics. The changes can be beneficial or detrimental to the mission of the service, depending upon their degree of variance from the required norm. Population growth, increased education, and a highly mobile population all contribute to change, but the impact of current technology upon factory automation and the subsequent shift from many blue collar workers to white collar workers will and does affect the price of goods and services the Government must procure.[2]

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[1] Oliver W. Tuthill, "The Thrust of Information Technology on Management," _Financial Executive_, (January, 1966), p. 19.

[2] _Ibid._

Some of the information generated from a flexible information system will be action-oriented and relay decision-making information to managers while other information will be non-action-oriented (such as historical files and reports).[1]

Information systems themselves are composed of basic building blocks arranged in various levels of a hierarchy. These basic elements are represented in Figure 4 below:
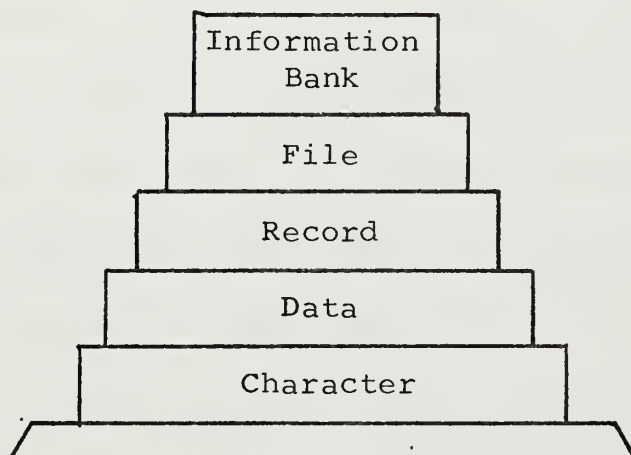
```
        ┌──────────────┐
        │ Information  │
        │    Bank      │
      ┌─┴──────────────┴─┐
      │      File        │
    ┌─┴──────────────────┴─┐
    │       Record         │
  ┌─┴──────────────────────┴─┐
  │          Data            │
┌─┴──────────────────────────┴─┐
│         Character            │
└──────────────────────────────┘
```

Figure 4
Information System Hierarchy

Character: The individual symbols or bits that are used to represent data, such as number, punctuation, alpheric letters and special characters.[2] An example of a character would be the magnetic ink character recognition system employed by the American Banking Association that can be read by humans as well as machines.

Data: Grouping of character in such a way as to be able to assign meaning.

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[1]Tomeski, Computer Revolution, p. 83.

[2]Richard N. Schmidt and William E. Meyers, Electronic Business Data Processing, (New York: Holt, Rinehart, and Winston, 1963), p. 104.

Record: A collection of related items of data collected from various inputs and treated as a unit.

File: A collection of related records which is dealt with as a unit.

Information Bank: A collection of files which is treated as a unit.

Cost of Information

Management information does not come free to the organization. More information entails more cost incurred in the collection, processing, retrieving and dissemination functions. Computers have been introduced to help hold the cost of information down to that of conventional methods (manual and mechanical) and also to provide management greater availability of data with which they can attempt to increase profit.[1] Third generation computers and information systems utilizing modern technology to decrease processing time and increase storage capacity by using minaturized components has proliferated the amount of data available to the manager. But, managers must be aware of the relationship between the size of the information data bank and the information it can generate and the cost required to generate this information and the value of the information towards achieving operational goals.

Therefore, managers should be aware of the economic

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[1]_Ibid_., p. 147.

impact of information they request or desire and weigh its value against its cost. Several factors that determine the cost of information are quality, quantity, timeliness, relevance, and consequence.[1]

"Quality: High quality information reduces the range of uncertainty about the results of taking action based on the information and encourages administrators to have greater confidence in exercising their functions.

Quantity: Usually, the higher the quality and the larger the quantity of information the greater the predictability of events that are of interest to administrators.

Timeliness: Information is timely in the sense of being available when required. Time has two dimensions in the information field. The first is the time span to be reflected in the content of the information, (e.g., day, week, month, quarter, year, five years). The second dimension is the time it takes to provide the information after it is requested, (e.g., it may take a few seconds to obtain information from a computerized information system, while it may take several weeks or longer to prepare such information on a noncomputer basis).

Relevance and Consequence: The information generated should have a relevance for the purpose intended. The consequence of having (or not having) the information either enhances the administrative process or impairs it. Seldom will there be a strictly neutral impact."

Tomeski has developed a model bringing together the characteristics and uses of information, balancing the types of information, uses in the organization, and consideration of value and cost functions along three axis. Figure 5 represents this relationship:

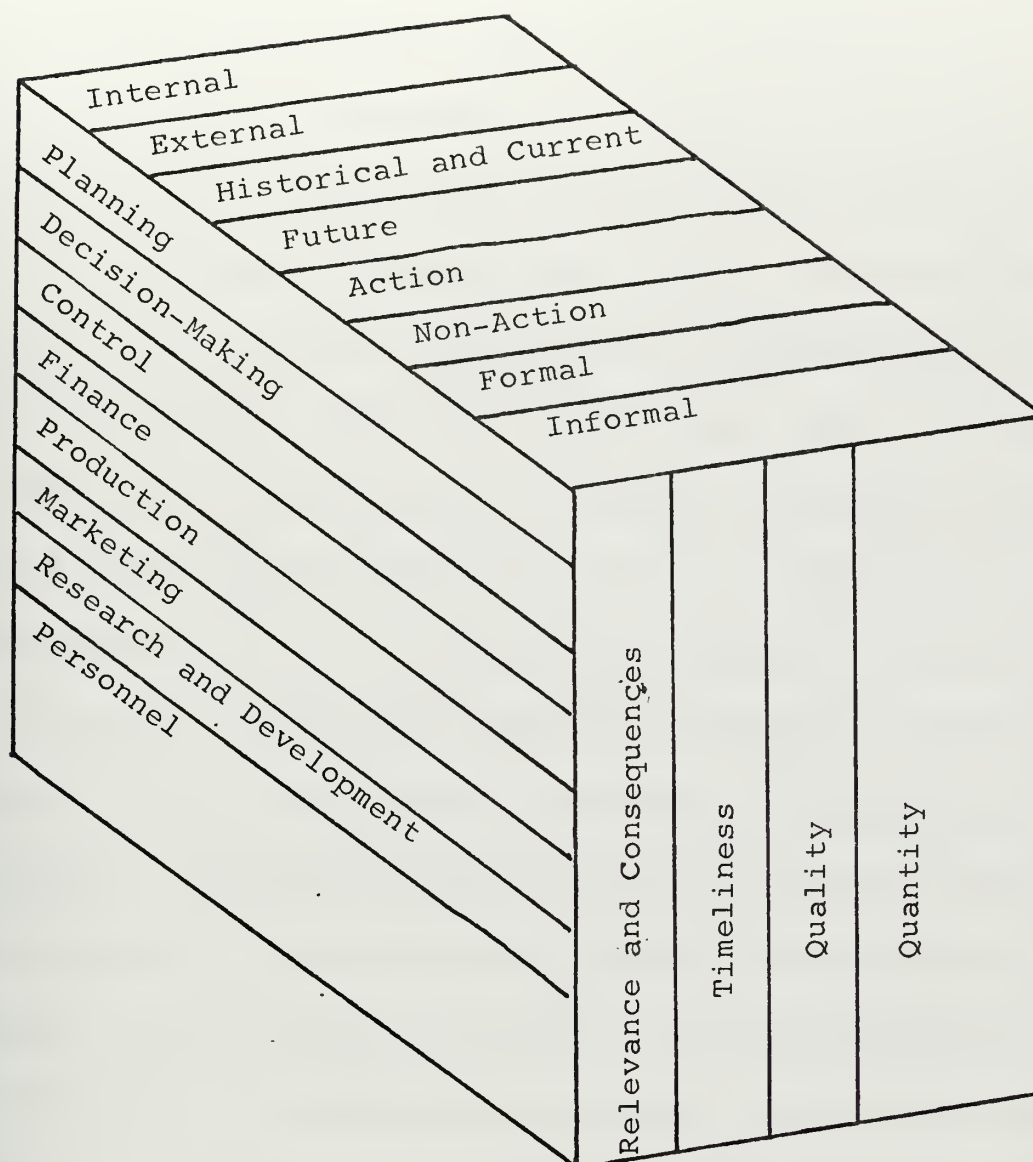[1]Tomeski, Computer Revolution, p. 85.

Figure 5
Information Characteristics

Weakness

Procurement and contracting functions have long suffered

from a lack of an <u>integrated data base</u>. An integrated data base

is a method of establishing and classifying data into standard

definitions or codes. The Navy currently uses the Armed Services

Procurement Regulations (ASPR) provisions which have standardized

forms, criteria, and numbering.[1] Uniform procurement instrument

identification numbering procedures (PIIN) provide for an

effective common reference point for all communications

involving contractural instruments.[2] Standardized techniques

are employed for numbering contract line items and exhibit line

items facilitating the use of automatic data processing equipment

by allowing establishment and control of records that can be

processed by machines for each line item of the procurement

instrument.[3] Standardized Material Inspection and Receiving

Report (DD 250) has further standardized the placement of data

elements. Nonessential data or data already available on other

instruments or forms has been reduced.[4] The Uniform Contract/

Award and Modification Documents have standardized the format

and content of procurement instruments to allow for ease in

transfer of contract administration data from the contracting

officer to the contract administrator.[5] Military Standard

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[1]U. S. Department of Defense, _Armed Services Procurement Regulations_. (Washington, D. C.: Government Printing Office, 1969 Ed.).

[2]_Armed Services Procurement Regulations_, Section 20, Part 2.

[3]_Armed Services Procurement Regulations_, Section 20, Part 3.

[4]_Armed Services Procurement Regulations_, Appendix I, Part I.

[5]_Armed Services Procurement Regulations_, Section 16, Paragraph 104.3-104.4.

Contact Administration Procedure (MILSCAP) is an attempt to attain a greater degree of simplification, standardization and automation in the processing of procurement and related logistic and financial data.[1] All of the above standardized forms and procedures have evolved over the years allowing for accurate communication between various members and contracting identities of the Navy and the Department of Defense. For meaningful communications and adequate coordination it is imperative that a modern information system be based upon a soundly structured data base.

Another weakness exhibited by many information systems is a lack of a single stream of data and information.[2] Often actions occurring in a particular area are not communicated to other units within the organization, although the actions will affect those units. Disregarding the actions of one unit might affect other units and result in a discontinuous flow of data and information. Tomeski indicates that the single stream approach means that data-representing-events taking place in one unit are used to update all related files and provide output information to all interested individuals.

Without an integrated data base and single stream of

[1] U. S. Department of Defense, Military Standard Contract Administration Procedures, (Washington, D. C.: Government Printing Office, December, 1966).

[2] Tomeski, Computer Revolution, p. 90.

data, managers will experience difficulty in obtaining accurate and timely information from their information systems. Poorly designed information systems can lead to ill-conceived plans, poor decisions, and ineffective control. However, by having an integrated data base and a single flow of data and information, organizations generally will have information systems with a high degree of information accuracy and integrity, and will eliminate overlapping functions and duplication.[1]

Professor John Dearden indicates that information is not homogeneous and that different kinds of information must be treated differently.[2] He believes five important dichotomies of information exist and are as follows:

1. Internal and external

2. Recurring and nonrecurring

3. Historical and future

4. Action and nonaction

5. Documentary and nondocumentary.

Therefore, in order to effectively handle information that is entering, circulating, being generated, and being outputted from an organization, it is important that the organization possess a logical system to handle these dichotomies.

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[1] Ibid., p. 91.

[2] Dearden, Computers in Business Management, pp. 115-116.

Organizations' Information Requirements

Organizations' units can be thought of as a large series of information networks, connecting the requirements for particular information or data. Large complex organizations, with many units having different missions and operational characteristics, require a different information system or network for each unit and require an overall informational system superimposed upon the separate informational systems.

Modern tools, methods, techniques, and processing equipment have been applied to this management concept. The viewing of an organization as a series of informational systems has been expressed by management theologians for many years.

The Naval organization, being similar to large businesses, can also be thought of as consisting of a network of information systems. Therefore, to be able to understand the nature of a Navy-wide management information system and subsequently a Navy procurement management information system, present organizational structures must be investigated.

Basic management information systems for the Navy parallel those in current industrial structures. This management structure can be thought of as a hierarchy composed of three levels of management as diagrammed in Figure 6.

Industrial

```
┌─────────────────────┐
│                     │
│     Executive       │
│     Planning        │
│                     │
├─────────────────────┤
│                     │
│     Management      │
│     Control         │
│                     │
├─────────────────────┤
│                     │
│     Operations      │
│                     │
└─────────────────────┘
```
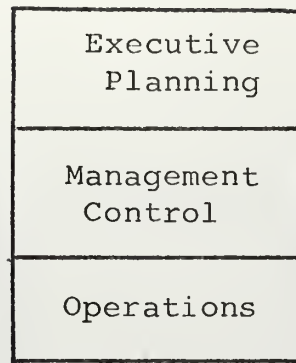
Figure 6
Basic Management Structure

Each of these levels in the management information system

hierarchy structure has their counterparts in the Navy. The

executive planning level is quite similar to the Secretarial

level; management control to Command level; and Operations to

the operating level. This structure is not rigid, and any

position of management, both industrial and Naval may fall into

any or all of the three levels, depending upon the function of

the organization unit and its related decision-making

requirements.

Different types of information are required for the

inputs and outputs at each level of management. Presently,

there is not a Navy-wide management information system which

provides the inputs and outputs which would allow for a vertical

flow of information or data by any automated means. Figure 7

represents input-output relations superimposed upon the management

information system hierarchial structure.

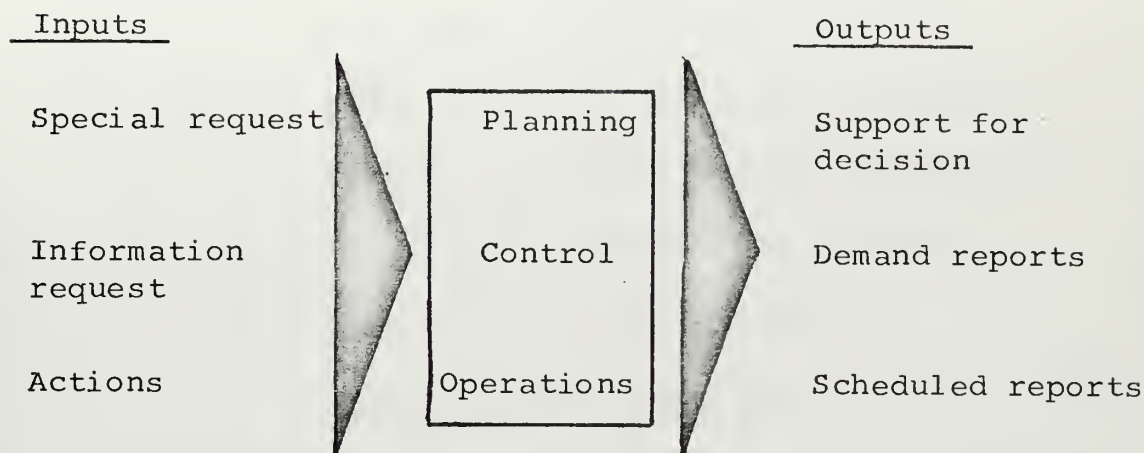| Inputs		Outputs
Special request	Planning	Support for decision
Information request	Control	Demand reports
Actions	Operations	Scheduled reports

Figure 7
Input/Output Relationships

Management information systems can be viewed as a sub-system with a vertical structure. Components comprising this vertical structure are for example; material, fiscal, facilities, transportation and maintenance. Because of the structure and size of the Navy, there doesn't exist an electronic or automated system of management information combining more than one or two of the subsystems, mainly due to the lack of an integrated data base. Currently, approximately 500 automated systems and subsystems exist in the Navy; very few are similar, but, what is more important, very few of them input and output to each other; therefore, little integration of systems and procedures has taken place.[1]

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[1] U. S. Department of Defense, Authorized Management Control Systems List, (Washington, D. C.: Government Printing Office, July, 1970).

Vertical subsystems have the following problems:

1. Lack of adequate control data.

2. Inability to communicate between systems.

3. Lack of uniformity of formats and procedures.

These problems have, no doubt, caused difficulties and delays on the operating level of the Navy by causing redundancy in reporting and inputting information.

Summary of MIS Benefits

Because of the advantage the computer offers modern managers, several valuable tools will be at his disposal for decision-making and performance evaluation. The rapidity of information flowing both horizontally and vertically will bring managers closer to their subordinate's activities. They will be more aware of operational status through a no-delay system instead of relying upon weekly, monthly or quarterly summaries. This real-time reporting will increase the amount of control top management will exert upon their subordinates. No longer will external organizational units enjoy the buffer of time or lengthly reports; therefore, increased discipline will result.

Gathering information requires the expenditure of scarce resources. Under a manual system, only the most rudamentary data could be collected. But, through the use of a well designed

management information system, more information, in greater

detail, and quantity, can be assembled in less time. Lastly,

the management by exception principle is a natural product of

MIS, allowing the manager time for managing his organization

rather than becoming mired in a sea of reports and detail.

CHAPTER III

INFORMATION SYSTEM PROBLEMS

Data Acquisition

The Armed Services Procurement Regulations, composed of over three-thousand pages, provides procurement personnel with instructions on what can, may and must not be done during the course of a procurement action. Considering the diversity and wide scope of government procurement actions, the procurement management reporting system is simple and brief. The section of the Armed Service Procurement Regulation on the procurement management reporting system states:

> "This section prescribes uniform reports which are required to be prepared by purchasing and contract administration offices in order to provide management with necessary information to help formulate change or measure the effectiveness of procurement and policy."[1]

Only four reports are listed, and these constitute the total requirement for the control of the Armed Forces Procurement system and the satisfaction of public law. These

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[1] *Armed Services Procurement Regulation*, Section 21, Paragraph 000.

reports are: (1) The Individual Procurement Action Report (DD350); (2) The Monthly Procurement Summary of Actions under $10,000 by Purchasing Office (DD1057); (3) The Report of Individual Contract Profit Plan, (DD1499); and (4) The Report of Contract Completion (DD1500).[1]

It would hardly seem possible that such a vast procurement system could be effectively controlled on the basis of only four reports. And, as it is that the number of reports and management information systems have been increased to the point where the effort expended in managing the reporting system is approaching the amount of effort required to manage the procurement actions themselves. Without some consolidation and elimination of duplicate reporting, the results of the present trends could prove more harmful than beneficial. From this simple four-report system has proliferated a vast number of Navy Department procurement reports, two examples of which are the S&A 80, Letter Contract Report and Cost Incurred on Contract Report (DD1177).[2]

Procurement personnel are often evaluated and rated on the amount of data they can provide concerning their operation. For some reason, top level management believes the mark of a

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[1] Armed Services Procurement Regulation, Section 21, Part 1-4.

[2] U. S. Department of the Navy, Navy Procurement Directives, (Washington, D. C.: Government Printing Office, 1966 Ed.), Section 16, Paragraph 250.

good procurement chief is the ability to quote chapter and
verse of prices paid over the last five years for arresting
cable for aircraft carriers, for instance. In their desire to
provide service to customers, procurement chiefs often indicate
they will immediately get data, such as the number of
non-responsive bidders in some obscure procurement for shoe
strings.

It doesn't seem logical that managers would need or
be required to have this detailed information at their
fingertips. In fact, if a manager does have this information
readily available, it could quite possibly indicate that he is
doing the work of his subordinates, is expending unnecessary
resources in the accumulation of this data or at least could
utilize his time more productively in his own area of
management.

When evaluating or controlling a procurement organization
the important factor to consider is not who has the management
information, but rather who produced it, who uses it, and how
much it cost. However, because so much emphasis is placed on
procurement statistics by the higher command, considerable
time and talent, often far in excess of the requirements, is
diverted by the subordinate commands to the function of
reporting statistics. Lieutenant Colonel William McKeown, in

his thesis concerning Material Procurement in the Army, indicates

that in the Army Material Command fifteen internal and forty-one

external reports are required, plus other related reports

submitted by other elements of the U. S. Army Material Command.[1]

He further makes the conjecture that with all of the services

reporting to all of their respective levels of command, there

must be literally thousands of procurement reports being

submitted to managers at all levels.[2] Such a vast reporting

requirement, no doubt, reduces efficiency in the procurement

function. Furthermore, LTC McKeown indicates that a

continuation of this trend could mean, from a defense procurement

management viewpoint, that procurement officers would be judged

by the completeness of their files, i.e., by the extent of their

reporting systems and latest information they have available.

Thus, the procurement manager who only maintains the reports

needed to effectively manage his organization and who is more

concerned with getting lower prices and doing a better job of

the procurement function would be penalized because he didn't

maintain a set of files that "might be useful someday".

An example of this is illustrated in the reporting

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[1]William L. McKeown, Lieutenant Colonel, United States
Army, "The Department of the Army Material Procurement
Management System", (unpublished Masters Thesis, Industrial
College of the Armed Forces, 1969).

[2]Ibid.

requirements for procurement response or procurement lead time.[1] Command headquarters is interested in procurement response time for two reasons. First, they want to know how long it takes to process a purchase order or to negotiate a multi-million dollar contract. Secondly, they want to compare the various procurement organizations in terms of the response time, number of actions completed, and manning level utilized in acquiring these results. Whereas, procurement activities are often required to submit data which is not normally collected over the years, these managers have found no meaningful use for this information other than that it is nice to know. Knowing this information may no doubt help them to improve their procurement operation, but they hesitate to expend the resources necessary to acquire this data.[2]

The Naval purchasing organization is composed of the activities listed in Figure 8 below:

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[1] Response or lead time - The time it takes to internally process a purchase request in a procurement organization.

[2] David Ward, Special Assistant, Navy Purchasing Office, Washington, personal interview, Washington, D. C., October, 1970.

Command or Activity	Thousands of Dollars	% of Dollars	Number of Actions	% of Actions
Ordinance System	$ 1,320,980	10.8	1,709	0.1
Air System	3,356,326	27.6	6,908	0.2
Supply System	3,245,123	27.0	3,271,436	91.8
Ships System	1,703,761	14.2	6,865	0.2
Facilities Eng.	998,462	8.2	9,166	0.3
Electronic Systems	283,830	2.2	780	0.1
Admin. Office	7,600	0.5	10,959	0.1
Naval Research	164,960	1.2	1,994	0.1
BuPers	9,970	0.7	1,515	0.1
Marine Corps	169,913	1.3	220,290	6.1
MSTS	788,384	6.3	34,177	0.9
	$12,049,309	100.0	3,565,799	100.0

Figure 8

Major Navy Purchasing Organizations

* U. S. Department of the Navy, "Survey of Procurement Statistics", Naval Material Command, (Washington, D. C.), June, 1969. pp. 8-10.

Field Purchasing Organization

Major activities composing the Field Purchasing System

of the Naval Supply System Command are listed in Figure 9

below:

Activity	Total Number of Activities In Each Category
Purchasing Offices	3
Supply Activities NSC/NSD	13
Shipyard Activities	8
Air Activities	10
Inventory Control Points	4
Ordinance Activities	12
Naval Stations	7
Miscellaneous	12
Total	69

Figure 9

Navy Field Purchasing Organizations

* U. S. Department of the Navy, "Survey of Procurement Statistics", Naval Material Command, (Washington, D. C.), June, 1969, pp. 8-10.

A better understanding of the magnitude and scope of procurement functions can be achieved by examining briefly the function and areas of responsibility for just a few of the activities of the Naval Field Purchasing System. For example, the typical Navy Purchasing Office is assigned a geographic support area over which it generally has contracting authority for procurements over $2500. A listing of outstanding requisition for the Navy Purchasing Office, Washington, D. C. revealed support effort for 189 separate commands. The buying performed by these activities is generally for the one of a kind requirement such as a room air conditioner for the admiral's quarters. In Fiscal Year 1969, Navy Purchasing offices performed 36,155 such actions with money obligated in excess of 308 million dollars.[1] Since Navy purchasing offices are separate activities, they have to rely upon activities external to their organization for computer and automatic data processing support.

Procurement organizations attached to Naval Supply Centers generally provide purchasing support to fleet units for non-standard items. These items are generally one of a kind buys. They also provide supply support for the inventory control department of the supply center by making repetitive buys of locally managed items. A few purchase organizations,

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[1]Ibid.

like those at Charleston, Long Beach, and Puget Sound, support

geographic areas as well as their respective shipyards. In

Fiscal Year 1969, supply centers accounted for 632,378 actions

expending $257,021.[1] Supply Center activities require computer

capability to process the vast number of requisitions into and

out of the logistics pipe line.

Inventory control points provide support for the Supply

Center activities. Inventory Control Points manage a given

quantity of items which support major weapons or support systems.

Purchasing in these activities is analogous to industry, where

the same item is being purchased on a repetitive basis. Because

of the repetitive nature of the buys, i.e., because the same

12AX7 tubes are bought year after year, automated procurement

systems have been developed for these functions utilizing

extensive computer programs. Purchasing at inventory control

points has been automated to such a degree that price history

files, maintained in data banks, can be recalled upon demand.

The repetitive nature of the buy allows all of this data to

be accumulated simply under a given federal stock number.

Figure 10 is a brief summary indicating the basic

difference between the three types of Navy procurement

activities.

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[1] Ibid.

	Type of Support	Automated Procurement	Ready Access to Computer	Types of Purchases
Navy Purchasing Officer	Area (many commands)	No	No	One of a kind
Naval Supply Centers	Area (many commands) Stock (own activity)	No[1]	Yes	One of a kind Stock
Inventory Control Points	Stock Special	Yes	Yes	Stock Special Purchases

Figure 10
Inventory Comparison by Activities

Procurement Staffing

Each of these procurement activities has their own unique

problems of acquiring data necessary for the management of their

organization as well as data they consider "nice to know" (but

is considered important by higher command). Procurement

staffing is a case in point. Managers in the field generally

obtain their staffing levels from the organization to which they

are attached. The purchase organization in a supply center

must take its proportionate share of increases or decreases in

staffing as the centers work load increases or decreases, or as

funds become available or dry up. Thus, in reality, only

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[1]S. R. Squire, Lieutenant, Supply Corps, United States
Navy, "Automated Procurement at San Diego", Naval Supply Corps
Newsletter, (December, 1969), pp. 8-9. An exception is the Naval
Supply Center, San Diego, which has an automated small purchase
program.

relaying current staffing levels becomes merely a statistical

exercise, because the real control of manning level is

accomplished at a different level. Appendix III (SA 80)

under the section titled "Personnel" lists the authorized vs.

the actual on-board count required to be submitted by Navy

Field Activities.

Navy Supply System Command is desireous of obtaining and

maintaining a data file containing information on manpower

management and qualification of procurement personnel for each

of the procurement organizations.[1] To establish such a data

file entails acquiring and transmitting the raw data by the

activities, and collecting, tabulating and displaying the

information in the command data file. Accurate accumulation

of such statistics becomes monumental even with the total use

of automatic data processing equipment coupled with a properly

designed procurement management information system. To

accumulate this data manually entails the buyer and all other

procurement personnel to keep an accurate count of each type of

transaction as well as the time required to perform that

particular function. With ADP equipment, each action on the

part of procurement personnel is inputted into the data file

for future recovery and display. It should be noted that

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[1]Gerard F. Argetsinger, Director Purchase Management
Division, Naval Supply System Command, personal interview,
Washington, D. C., July, 1970.

reporting requirement is in addition to the four basic reports

required by the Armed Services Procurement Regulations, is

also in addition to the information desired by Appendix IV

(SUP 4235.2), and duplicates some of the information reported

in Appendix III. Thus, the amount of the procurement

management information desired by Naval Supply System Command

is extremely detailed in scope and, no doubt, requires

expenditure of additional resources, both monetary and

personnel, in its accumulation and dissemination.

Navy procurement is big business. For example, in

Fiscal Year 1969, procurement officers processed in excess of

a half million procurement actions.[1] Although these figures

are reported with the highest degree of accuracy, they do not

accurately reflect the magnitude of the procurement managers

work load. A procurement action count corresponds to a contract

document count but not to a purchase request count. For

example, the letting of a multi-billion dollar contract for a

weapons system to a defense contractor would be counted as one

procurement action; yet the writing of a purchase request for

a bucket of gray paint also represents one procurement action.

The weapon system contract is composed of numerous separate

procurement requests, whereas the bucket of paint only contains

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[1]"Survey of Procurement Statistics," pp. 8-10.

one procurement request. Electronic Supply Office (ESO) in

Chicago, which is an Inventory Control Point for the Navy,

reported 25,473 procurement actions;[1] actually they processed

53,000 purchase requests.[2] These statistics are compared to

the Naval Supply Center Oakland which had a reported action

count of 118,163; this number indicates the procurement request

count, because here each request is generally handled separately,

resulting in individual procurement actions.[3] The Naval

Supply Center Puget Sound reported 65,528 actions, but because

similar purchase requests were grouped and counted as one

procurement action, there were actually an average of 1.8

requisitions per action or 117,950 separate procurement

requests actually processed.[4]

MILSCAP

So far two major problem areas have been discussed.

These areas, both of which constantly require managements'

attention, are (1) work load measurement and control, and

(2) personnel-training, reporting, and control. But a major

problem facing all procurement organizations within the

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[1] Ibid., p. 9.

[2] Charles G. Reynolds, "Motor: Procurement by Objectives Management by Exception," Navy Supply Corps Newsletter, (September, 1970), p. 16.

[3] "Survey of Procurement Statistics," p. 8.

[4] Ibid.

Department of Defense is the pending implementation of the

Military Standard Contract Administration Procedures (MILSCAP).

A brief description of the system, along with the inherent

problems it will and has created for non-mechanized procurement

organizations, will further demonstrate the scope of procurement

difficulties.

Why MILSCAP?

At the present time, contracting officers, system

inventory managers, project managers and others concerned about

contractor performance on their applicable contracts, do not

possess adequate control over the particular performance items

they desire. If interested parties desire what might be

considered an adequate or satisfactory control system, it requires

a great expenditure of resources on their part, because any

system they currently employ to achieve the required status

must be basically a manual paper shuffling system. Field

administrators are constantly being badgered with request for

up-to-date status. The general consensus of the contracting

officers is that field administrators are not as responsive as

they would like. Because of the slow flow of the manually

processed status, contracting officers are frequently required

to use the telephone in order to acquire necessary information,

and, even using the telephone, they are not always able to

communicate with the administrator who can be of most

assistance. Therefore, the telephone is not always a good

solution to the contracting officers' status problems. Letters,

forms or other request for status forwarded by mail often take

weeks to reach the desired administrator, thus drastically

limiting the effectiveness of the field administrator to

provide those individuals who desire information with immediate

contract information status. Furthermore, even if communications

were improved, the field administrator could not always provide

the information requested because he lacks sufficient data.

This lack of data might not be considered the fault of the

administrator, but it does handicap him when he is trying to

improve the contract administration function.

One of the largest problems formerly involved in

government procurement that helped to bring about the present

MILSCAP system was the wide diversification in the contract

administration function that was performed by each service,

resulting in much duplication and waste of time. The

establishment of the Defense Contract Administration Service

(DCAS) consolidated the field administration of contracts, which

had previously been under the control of the various services.

Until the establishment of DCAS, it was possible for contracts

to be administered by one particular service when the majority of the work being performed at the manufacturing plant was for another service. Sometimes more than one service might be in a plant instructing management on how they wanted particular work or inspections accomplished. This created problems in the coordination of information between the contractors and Government, and between the services as well, to say nothing of the duplication of effort on the Government's part. Even today, the services have difficulty communicating with each other because of dissimilarity in contract status language. MILSCAP proposes a common language in which the several services can communicate with each other; it also translates this language into a format which can use rapid communication techniques now available with current automatic data processing systems within DOD.

History of MILSCAP

The next question one might ask is what has been accomplished to date? MILSCAP is not a new program. It came as a spin-off of the Project 60 which established DCAS. During the course of Project 60 it was determined that a study group would be established to investigate the possibility of applying automatic data processing equipment and procedures to the function of contract administration. The study group published its

report in August of 1964, and indicated strongly that automation

of the contract administration function was not only practicable

and feasible, but was necessary if DCAS was to keep current with

its assigned mission and not become bogged down in its own

paper work. The Department of Defense appointed the Defense

Supply Agency (DSA) as MILSCAP System Administrator and gave

this agency the responsibility for developing the external flow

of data requirements.[1] After a special committee of this

agency studied the requirements for external flow of data,

DSA published a proposed MILSCAP operating manual in October

of 1965. A draft of the manual was distributed for comment

to the various services, offices, field activities, and others

concerned. The Navy consolidated its comments into a position

statement and submitted this statement to DSA in February of

1966. After all other services and agencies concerned had

submitted their comments, a series of meetings was held to draft

a final version of the MILSCAP manual. Since then, this original

manual has undergone numerous changes in an attempt to make

the entire system more effective, and in fact a new manual was

published in August, 1969,[2] which incorporated all of these

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[1] "The external flow of data" is the flow of contract,
production, delivery, and financial information between field
contract administration organizations and the activities
performing a broad range of procurement, material management and
financial accounting functions.

[2] Military Standard Contract Administration Procedures
Manual.

changes. In May, 1967, DOD issued a directive[1] which formally
established MILSCAP as a DOD Program. The Assistant Secretary
of Defense for Installation and Logistics (ASDI&L) issued a
memorandum in January of 1968, establishing various emplementation
milestones and dates. At.this time, the key milestone was for
full implementation of MILSCAP on a DOD basis by July 1, 1970.
This date has not remained firm and will be discussed later
in this report.

Data Flow

Various people are involved in the administration of
required data·flow. Some of those who are required to get into
the data flow network are the contractor, the contracting
officer, the consignee, the contract administrator, the
requisitioner, and the individual finance or paying officer, to
name just a few. However, the primary data link is between
the procurement contracting officer and the contract administrator
at the contractor's plant. It is between these two parties that
data and information must flow smoothly and rapidly, concerning
such things as the contract itself, any changes that are made
either at the plant or by the requisitioner, and the various
forms and types of status necessary to keep all concerned
current.

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[1]U. S., Department of Defense, "DOD Directive 4105.63,
May, 1967", (Washington, D. C.: Government Printing Office,
1967).

Others in the data link who must be kept current are
the requisitioner, who is concerned about the end item delivery
date and the consignee (not always the purchasing officer), who
is concerned about when the item is going to be received, and
if receipt and acceptance information must be forwarded back
to the contract administrator. Since eventually the contractor
must be paid for his effort, and DCAS is the paying activity
for contracts it administers, it, too, must be properly informed
as to Government acceptance before it will mail the check to
the contractor. The DCAS paying office, in turn, bills the
various services and they in turn tabulate the data on the status
of the various expenditures. Another vital data link that must
not be neglected is between the contract administrator and the
contractor himself. All of these people are tied together into
a consolidated system under MILSCAP through the use of automated
procedures as will be explained below.

Contract Abstract[1]

The contract abstract serves as the initial input into
the system. This abstract is composed of several sets of
punched data cards which incorporate information about the
contract itself, and which must contain all essential elements
which have been prescribed. For example, purchasing activities

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[1]MILSTRIP Manual, p. 4-1.

that assign large numbers of contracts for DCAS administration,

i.e., more than 250 annually,[1] are required to prepare the

punched cards and forward this information over the present

communication system to the cognizant DCAS office. For those

activities who assign few contracts, this requirement does not

exist; they forward the hard copy as done presently. Problems

immediately arise for these smaller activities whenever they

desire status information on outstanding contracts. In order

for them to inquire about the status of a contract, they must

communicate in the prescribed computer format, and, conversely,

when status information is received from the contract

administrator, it will be in the coded format. Both actions

necessitate time consuming transcripting for these smaller

activities.

In order to better understand the MILSCAP system, a

working knowledge of the contract abstract is mandatory. The

abstract is the key to the system. The numerous cards required

for the abstract can probably be obtained as a by-product of

current ADP programs in the purchase organizations using

flex-a-writers or optical image devices. If this form of

automated equipment is not available the cards will have to be

key punched after the fact from a copy of the contract itself.

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[1] James A. Morgart, Lieutenant Commander, Supply Corps, United States Navy, Assistant Coordinator MILSCAP Staff, Navy Material Command, personal interview, Washington, D. C., March 1970.

The contract abstract consists of the following cards: two administrative data cards, one accounting classification card, two supply data cards per line item, and one each of supply schedule data, service item, and control item serial cards.

Administrative Data Cards[1]

The two standard 80 column administrative data cards for each contract contain general information, such as the Procurement Instrument Identification Number (PIIN), the various address codes, the effective date, the paying office, the contracting plant, and the contract administrator. Another inportant item these data cards contain is the degree of authority which is to be delegated to the Administrative Contracting Officer (ACO). Through the use of codes, the purchasing office can assign full administration as outlined in ASPR[2] or limit the administrator to specific functions such as inspection and acceptance. Another important element of the administrative data cards is the alert codes, which inform the administrator that the contract contains unusual clauses or provisions, such as flight operations, or the administration of Government property.

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[1] MILSTRIP Manual, pp. 4-6 through 4-8.

[2] U. S. Department of Defense, "Defense Procurement Circular #58", (Washington, D. C.: Government Printing Office, 1969).

Accounting Classification Card[1]

One accounting classification card is prepared for
each different set of accounting data specified in the contract.
The accounting data is coupled with each line item as applicable
by reference numbers.

Supply Data Cards[2]

The record of supply line item data consists of two
data cards and contains information concerning the particular
line items. It contains such things as the federal stock number,
the manufacturer's part number (if applicable), a short noun
description of the item, the quantity ordered, the unit, and
the price. Other codes indicate quantity variance, acceptance
site, and Free on Board (FOB) site.

Supply Schedules,[3] Service,[4] and Control Data Cards[5]

Other cards required in the abstract are the supply
schedule data cards, which contain such information as the
shipping destination, how they should be marked, the delivery
dates, the quantity, and the requisition number. The service
item data card is used in place of the supply item cards for

[1] MILSTRIP Manual, pp. 4-7 and 4-8.

[2] Ibid., p. 4-8.

[3] Ibid., p. 4-10.

[4] Ibid., p. 4-12.

[5] Ibid., p. 5-1.

service contracts. The controlled item serial card is used

for those items which require a special control and serial number

for later identification.

Therefore, seven cards make up the basic contract

abstract for one supply line item. These cards are prepared

by the purchasing office and are then transmitted via the

present DOD communication network to the proper administering

office. A hard copy of the contract follows by mail.

Feedback Communication System

As with any system, communication must be in both

directions. An adequate feedback network allows for

communications between the contract administrator and purchasing

office. This communication is again accomplished through a

series of data cards. Any change in the abstract is

accomplished through the use of a Modification[1] card. A

Supplemental Data Request[2] card is generally the result of the

administrator requiring additional information or approvals

from the contracting officer. The administrator can also

initiate a Revised Delivery Forecast[3] card which advises the

contracting officer that the contractor is having some form of

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[1]Ibid., p. 6-1.

[2]Ibid., p. 9-1.

[3]Ibid., p. 12-1.

difficulty and will not be able to meet the specified delivery date. Through a series of codes, the administrator informs the contracting officer of the reason for the delay, the recommended action, and the revised delivery schedule, if one exists. There are cards for accelerating or deaccelerating the delivery date, for follow-up, and for correction, to name just a few. The Shipment Notice[1] card designed to replace the present distribution of the Material Inspection and Receiving Report (DD 250) is transmitted at the time the material is shipped.

When all action pertinent to the contract has been completed, including the final shipment of goods and the return of any Government property, a Completion Status card is forwarded from the ACO to the PCO which allows for the closing of the files.

Communication Between Administrator and Consignee

The few major cards which remain pertain to the payment function. Simultaneous with the shipment notice card, a destination acceptance alert card is transmitted to the consignee if the contract indicates acceptance at the destination. This card is to advise the consignee that the shipment is on its way and that some form of action will be required on his part.

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[1] Ibid., p. 13-1.

Basically, this action is to inform the DCAS if the material has or has not been accepted by the Government. It is the acceptance report from the consignee which gives DCAS the authority to pay the contractors invoice when it is submitted. It is believed that the use of messages and the hi-speed data processing system, in lieu of the previously forwarded copies of DD 250, will prevent the Government from easing the prompt payment discounts it did in the past when hard copies of documents failed to reach the proper person within the DCAS organization.

Appendix V illustrates graphically the data card flow and major participants.

Standardization Actions

Because DCAS administers contracts from all armed services, the development of a common language became necessary. In order for MILSCAP to become an effective tool, standardization was not only desirable, but mandatory. The present trend is toward service-wide standardization of terms, and MILSCAP is just another of the many MIL type systems that is accomplishing this goal. Some of the more important of these other systems follow.

Procurement Instrument Identification Numbering (PIIN) and Contract Line Item Numbering (CLIN) were incorporated in

ASPR and went into effect July 1, 1966. The numbering of contracts and line items in a uniform manner was a great benefit not only to the various services and administrators, but also to the contractors as well, for it reduced the confusion that often surrounded long and complicated contract or purchase order numbers.

The uniform contract schedule format is an effort to establish a standard contract format which will be acceptable for all types of procurement activities. A quick look through a series of contracts from the various services reveals very little similiarity and consistency in the content of data elements. Sometimes a particular type of data element might be located in various parts of the contract and not even be consistent within a particular purchase organization. This inconsistency in the type and location of various data elements often causes lost time and confusion for those who handle the contract. The ASPR committee is currently working on this problem, but so far little progress has been accomplished. Their goals, however, are to standardize the contract forms in such a way as to be machine sensitive and allow for optical scanning techniques to convert the contract information into machine processable data.

Another important standardization system is being developed by DOD. Few people know it exists, but it will affect all DOD activities and those with whom DOD does business. The Defense Organizational Entity System (DOES) is still in the planning stage but will consist of a six-digit alpha numeric code which will identify every organizational unit or entity within DOD. The DOES codes will replace currently assigned codes, and, in addition, code every manufacturer or business activity which does business with DOD.

Further standardization of data elements is necessary to properly interface with the flow of data between the various MILS; i.e., MILSTRIP, MILSTRAP and others in current use or planned. It is imperative that the same data be consistent in all of the systems.

The authors of MILSCAP anticipate that a great deal of standardization will be accomplished prior to the implementation date, but, nevertheless, contracts will still exist using nonstandard symbols and codes which will have to be recoded and placed into the system. The Assistant Secretary of Defense (Comptroller) has the responsibility for the DOES coding and uniform application of the data elements.

MILSCAP Difficulties

As demonstrated, MILSCAP relies exclusively upon
automated means of communication between contracting identities.
Two problems immediately surface upon implementation of this
management information system. First the problem of creating
the abstracts. The second problem is the amount of effort and
resources that will be required by non-mechanized procurement
activities to code and decode data so that they can communicate
with the contract administration activity.

Representatives of the Navy Purchasing Office Washington,[1]
Naval Supply System Command,[2] express concern about the amount
of effort and resources it will require to process abstract
cards. For activities having automatic data processing or
electronic account machines readily available, MILSCAP will
mean that their procurement management information systems, if
any, will have to be modified. In some cases completely new
programs will have to be written to interface with MILSCAP.
Likewise, all future Navy-wide procurement management information
systems will have to accomodate MILSCAP's requirements.

Problems will be even greater for the smaller procurement
activities without ADP and EAM equipment. They will be forced

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[1]Ward, Interview.

[2]Joseph P. O'Donnell, Procurement Analyst, Naval Supply
System Command, personal interview, Washington, D. C., February,
1970.

to code all of the required data into message format for

transmission to the appropriate DCAS. Status from the DCAS will

be received in the same message format and will require

decoding. Many procurement managers feel the increased effort

required to code and decode will be time consuming and

nonproductive. In their opinion, the liabilities of MILSCAP

far outweigh any expected benefits.

The author doesn't agree with these critics. When any

new management systems are introduced, they appear to create

more work than benefits. People, in general, resent change,

and MILSCAP is something new, that is, it is a new way of

processing paperwork during the contract administration functions.

After the system has been in effect five or ten years, these

same critics will wonder how the job was accomplished in the

old days.

CHAPTER IV

CURRENT PROCUREMENT INFORMATION SYSTEMS

Introduction

The Navy does not currently possess one universal

procurement management information system. Each procurement

organization develops a system tailored to its own needs.

Although there are therefore many individual procurement

management information systems in existence, a careful look at

one from each level in the chain of command will demonstrate

the similarity of information deemed important to properly

manage and control an organization. The procurement management

information system employed by the Navy Supply System Command,

Naval Material Command, Electronics Supply Office, and Naval

Supply Center Long Beach will be discussed. Chapter V

constitutes a model developed by the author for an automated

procurement management information system taking into

consideration the optimum characteristics of an effective

system; (i.e., management by exception, interface with present

automated management system (MILSTRIP, MILSTRAP), current
requisition status, etc.).

Naval Supply System Command

The Naval Supply System Command accumulates the
statistical input for its management information system through
two forms which are submitted by the activities it manages.
They are: the Monthly Procurement Summary of Actions under
$10,000 By Purchase Office (DD Form 1057)(Appendix I)[1] and
the Purchase Statistics Report (NAV S & A Form 80)(Appendix II).
However, as detailed as the present reporting is, it does
not supply the type of information this command feels it needs
to adequately evaluate and control its subordinate activities.
Therefore, the present reporting system has been modified to
include additional information on (1) Procurement processing
or lead time, (2) Measurement of buyer performance, (3) Work
load, (field system wide) and (4) Level of training at each
procurement activity. (Appendix VI).

Buyer Performance

Several methods have been employed in an attempt to
measure buyer performance. Work standards have been developed
for various phases of the procurement cycle. For the small
purchase operation realistic standards have been established

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[1]Argetsinger, Interview.

through the (DIMES)[1] systems of work measurements, that is,

definite time limits have been established for the placement

of calls against the basic ordering agreement. However, it

is difficult to assign this kind of work standard for the

placement of complicated procurements because this is not a

repetitive type function like small purchase operations.

Since there are no accurate work measuring tools for this kind

of function, the alternative method for acquiring the needed

statistics is by modifying of the present Resource Management

System (RMS) which is a financial control management information

system. Under this system, procurement managers charge labor

costs against the various categories listed in Figure 11.

1.   Purchase Document Control
2.   Buying Operations
3.   Document Production
4.   Bid Operations
5.   Other Clerical Effort
6.   Procurement Management
7.   Contract Administration
8.   Contract Administration Management

Figure 11
Purchase Operations Cost Centers

        * U. S. Department of Defense, Defense Integrated
Management Engineering System (Dimes) in DOD Industrial-Type
Activities, (Washington, D. C.:   Government Printing Office,
1965), Chapter V.

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        [1] U. S. Department of Defense, Defense Integrated
Management Engineering System (Dimes) in DOD Industrial-Type
Activities, (Washington, D. C.:   Government Printing Office,
1965).

Purchase Document Control[1]

The cost involved in processing incoming purchase
requests and other documents entering the purchase organization
is included in this category. However, in addition to this
information, the Naval Supply System Command desires a count
of individual purchase requests broken down as to small purchases
(including purchase order, imprest fund transactions, delivery
orders, calls against basic purchase agreements, orders against
General Service Administration/Federal Supply Schedules, and
indefinite delivery) into either automated or manual means of
execution. Further breakdown of orders under basic ordering
agreements (BOA), both automated and manual, is desired, as
well as a breakdown of the large purchase count (including
total receipts for processing of IFB's, RFP's, RFQ's, letter
contracts, etc.), and a separate report from the Ships Part
Control Center concerning the amount of ammunition processed.

Buying Operations[2]

This cost center account accumulates costs incurred in
the buying process prior to the preparation and issuance of
bids or requests for proposals or quotations, during the
solicitation phase, and after receipt of the bids, proposals
or quotations. The count of completed individual work units

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[1] Ibid.

[2] Ibid.

is accomplished as they are released to the document preparation division. This counting of documents is a modification of the basic RMS system. Appendix VII lists the required format for reporting the data on purchase request count and man-hours. expended under this particular cost center. Appendix VIII is the required format for reporting response/workload statistics; it is also a modification of the basic RMS system.

Document Production[1]

Necessary clerical effort that is related in the preparation and production of IFB/s and RFQ's, plus the preparation and production of all necessary contractural paper work concerning the contract, awards, acceptances and purchase orders is charged against this cost center. Figure 12 below indicates the modification of the basic management system (RMS) as to the breakdown and the point of count as it is released from the purchase document production component, which is in addition to the basic management information system.

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[1] U. S. Department of the Navy, NAVSUP Management Handbook, Publication 285, (Washington, D. C.: Government Printing Office, 1966), Chapter 5.

Method	Completions	Man Hours Expended on Completions
	(Documents)	(M/HS)
A. Small Purchase and orders against BOA's	65	15
B. Large Purchases	20	275

Figure 12
Report Format for Document Production

Bid Operations, Other Clerical Effort, Procurement Management[1]

Bid operations, other clerical effort, and procurement management are the remaining cost centers in the buying operation. Each of these cost centers does not process individual units of work, but rather, perform a variety of operations. NAVSUP's reporting system, therefore, accumulates the dollar amount charged for each of these operations for use in their management information systems.

Contract Administration[2]

The Contract Administration cost center accumulates cost incurred which are related to the contract administration function, that is, from the time of award through contract completion. It includes such items as: assuring requirement, obtaining and analyzing contractor performance data, required paperwork, issuing change order, and many other related functions. The number of modifications, supplemental agreements, change

[1] Ibid.
[2] Ibid.

orders, and others (including calls, letters, etc., not a complete work unit) are counted and submitted, in addition to the man hours of labor expended to be inputted into the management information system.

Naval Material Command

The Naval Material Command, which is charged with the conduct of the total Navy Material mission, consists of six subordinate commands:

Air Systems Command
Ship Systems Command
Ordnance Systems Command
Electronics Systems Command
Supply Systems Command
Facilities Engineering Command.

"Also executive direction of major project is provided by Project Managers under the Chief of Naval Material."[1]

The Navy Material Command has developed a Procurement Management System. It uses as its basic input to the system the DD Form 1057 (Appendix I) and DD Form 350 (Appendix II), both of which are source documents. This system is designed by developing concepts and approaches so that it will exploit the capabilities of the electronic computer rather than being limited by the capabilities of electronic accounting machines.

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[1] U. S. Department of Defense, Procurement Training Manual, (Washington, D. C.: Department of Defense, 1968 Ed.), p. I-9.

The difference between the two systems is in the way the equipment performs its task. Computers are primarily electronic devices which have the capability of performing rapid arithmetic calculations with great flexibility in programming; the electronic accounting machine devices are primarily concerned with tabulating and storing information with limited speed and storage capacity.[1]

Naval Material Command anticipates using the data and information developed by the expanded[2] Procurement Management System to meet their commitments for reports to the Department of Defense and for statistics for publication and reference type reports for internal Navy use; (e.g., for Small Business Officers in the office of the Assistant Secretary of the Navy for Installation and Logistics and Naval Material Command or for responses to Congressional inquiries).

Navy Material Command has devoted considerable thought to the question of how best to use the greatly expanded capability of the electronic computer that is generated by a Master Automatic Data Processing Program. The initial system design will provide the program to generate groupings or families of reports relating to procurement management.

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[1] Richard W. Brightman, Bernard J. Luskin and Theodore Tuton, Data Processing for Decision-Making, (New York: The Macmillan Company, 1968), p. 114.

[2] Referred to as ADP Master Program.

Examples of such families or groupings are: forecasts and trends; quality of performance; work measurement and staffing; and problem identification. Comparative computer print out would be generated for each of the Naval Commands based on dollar volume, claimant programs (such as those listed in Appendix IX), and small business and would be useful for forecasting and trend analysis. How well the various commands perform the buy function is also of interest to Naval Material Command and their procurement information system is designed to give information as to the quality of performance, the extent of competition, the method of procurement, and the number and nature of contract modifications under various kinds of procurement actions. Work measurement and staffing information is obtained from a break down of dollar value and number of procurement actions for each of the Navy System Commands; (e.g., Air, ORD, SUP), plus additional data elements such as negotiation authority and contract type. Another area of concern of Naval Material Command is that of problem identification. Problems concerning either the actual operation of one of the Navy procurement organizations or problems associated with a particular contract; (e.g., excess profit) are brought to the forefront by either an examination of the

statistical data or by matters brought to command attention by

formal inquiry.

The computer application for an effective Procurement

management information system for Naval Material Command related

to an Automatic Data Processing Master Program can best be

demonstrated by specific situations. A number of situations

illustrating the function of the system are set forth in the

paragraphs which follow.

Trends

Naval Material Command desires to compare the type of

contracts; (e.g., fixed prices, cost, incentive, etc.) by the

various Naval system commands, over at least a three-year

period in order to determine if there have been any significant

trends. Information is furnished by inquiry to the computer

according to contract type and system command.

Quality of Performance

Naval Material Command continues this evaluation into

the use of negotiation authority.

"Purchases of and contracts for property or services
must generally be made by formal advertising (ASPR 3-200).
But the law provides in procurements by the Army, Navy,
Air Force, Coast Guard, and NASA that negotiation may be
used in 17 specific situations if advertising is not
practicable and feasible (10 U. S. Code 2304)."[1]

Attention has been recently focused on exception fourteen,

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[1] 1969 Government Contracts Guide, (New York: Commerce
Clearing House, Inc., 1969), p. 205, paragraph 810.

which deals with technical or special supplies.

> Purchases and contracts may be negotiated without formal advertising for technical or special property which requires substantial initial investment or an extended period of preparation for manufacture and for which advertising would be likely to result in higher cost because of duplication of investment or would unduly delay procurement because of duplication of necessary preparation......
>
> This type of procurement generally involves cases in which (1) high starting costs have already been paid for by the Government or the supplier; (2) preliminary engineering and development work is involved which would not be usable by or useful to another supplier; (3) elaborate special tooling has already been acquired; (4) substantial time and effort has already been expended in developing a prototype or an initial production model; or (5) important design changes will occur which will continue to be developed by the supplier (ASPR 3-214).[1]

The management information system will also provide a list of contractors with the respective number and dollar value of the contracts they have been awarded or a list with each contractor showing the amount and date of particular contract rewards. Award dates are useful in that they may indicate if requirements were staggered in such a way that only the contractor in production could or would be able to meet the delivery dates. Amendments sometimes indicate that specifications were hastily drawn or that requirements were incomplete. This could indicate that even the pre-selected contractor could not possibly meet the required delivery date which was used to justify the award.

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[1] _Ibid_. p. 209.

Work Measurement and Staffing

The current thresholds for Advance Procurement Plans is $300,000 for Research and Development Contracts, and $1,000,000 for production contracts.

> "Advance procurement planning (APP) is a method used by DOD to chart the major procurement programs contemplated by it over their life-cycle and is keyed to the DOD Five Year Force Structure and Financial Program. Its objective is to provide a plan for the procurement of the elements of any proposed object at the time they will be needed and at the lowest cost to the Government. It is applicable to both developmental and production procurements, to hardware, supplies and equipment, and to any items which require formal, detailed and complex planning."[1]

The information system is used to furnish totals submitted by various system commands on all letter contracts and definitive contract awards above these prescribed levels according to the procurement method utilized and negotiation authority; thus, it provides a general picture of the Advance Procurement Plan Workload. A quick review of the number of Advance Procurement Plans submitted by each system command for approval would indicate whether there is a gap between potential and actual in this particular program. From the data, estimates could be made on the number of Advance Procurement Plans an individual could accomplish for a given time period.

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[1] Ibid., p. 25, paragraph 288.

Problem Identification

Frequently, questions are raised pertaining to a particular type or classification of clauses found in a Navy contract. These individual inquiries are many times the forerunner of more exhaustive requests to follow. A properly designed information system will have the ability to provide the necessary information requested from various aspects such as: (1) 100 top contractors, (2) individual contractors selected at random, (3) type of contract, and (4) method of procurement; to name just a few. Armed with such information supplied by the procurement management information system the Navy Material Command is in a better position to take action rather than await directives or suggestions from higher authority, be it the Secretary of the Navy, Defense, or Congress.

Purchase Organization Profits

The proposed master plan utilizing the new automatic data processing system will be used for the development and maintenance of purchase department or organization profiles located within the various system commands. These profiles will include, but will not be limited to, such information as organizational charts, staffing, productivity, and key problem areas.

Productivity analysis depends to a large extent on work measurement standards and the establishment of these standards. Comparative data over a three or four year period for each system command using such data elements as methods of procurement, negotiation authority, and kinds of procurement action should develop meaningful standards. Attempts have been made to weigh various types of procurement actions (more time and effort is involved with placement of a major weapons system contract than ordering a small replacement part utilizing small purchase procedures) against the volume of purchases and the number of people within the organization. Figure 13 is a correlation analysis prepared to indicate these relationships.
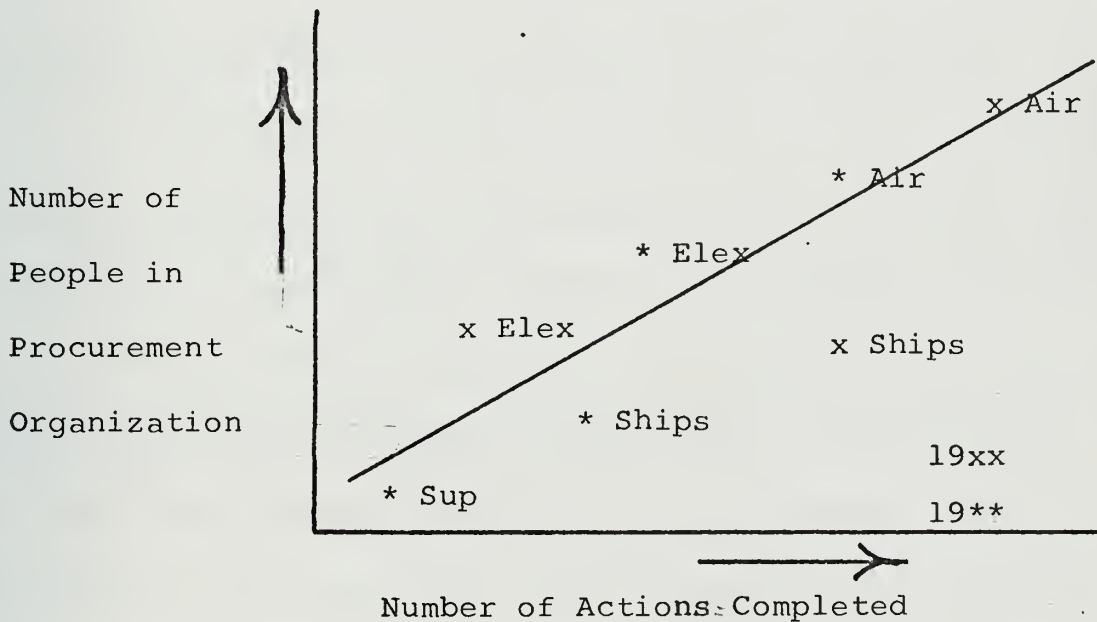
Figure 13
Correlation Analysis

* Tom Cambell, Lieutenant, Supply Corps, United States Navy, Naval Material Command, personal interview, Washington, D. C., August, 1970.

Quality of Statistical Input Data

The quality of input data taken from the two basic input documents, the DD Form 350 and DD Form 1057, which have always served as the basis for periodic reports, will assume more important roles as the Naval Material Command intends to utilize this data for management purposes. At the present time, the data is used only for statistical purposes, but when the system becomes operational, it will form the basis for measurement of performance. Accuracy will, no doubt, improve as it assumes a higher role of importance.

Appendix X is a listing of the various data processing runs supported by about 105 computer programs necessary to provide the periodic statistics for higher authority.

Lieutenant Tom Cambell indicated that one of the biggest problems facing his particular organization is that of data collection.[1] Not knowing if the DD 350 (Appendix II) has or has not been submitted makes this task particularly difficult. Also, there is no method of checking the validity of the DD 350's that are submitted. The major commands submit only one DD 1057 after they have consolidated the data from its various components. This consolidation process is time consuming and frequently means delays in the master report.

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[1]Lieutenant Tom Cambell, Supply Corps, United States Navy, Naval Material Command, personal interview, Washington, D. C., August, 1970.

According to Lieutenant Cambell, a second problem that faces his organization concerns costs. He indicated that the cost of computer time and the people required to gather the data amounts to approximately $300,000 annually. Even with this expenditure of money, the accuracy of the report is doubtful, because estimated prices are used instead of actual prices.

One remaining problem is the difficulty in determining whether the contracting activity in the DCAS has filed the necessary reports and paper work.

Electronic Supply Office

The Navy Electronic Supply Office (ESO) implementated, in May of 1970, a procurement management information system under the acronym of MOTOR (Monthly Throughput Observation Report). This system utilizes the concepts of procurement by objectives and management by exception.[1]

In fiscal year 1969, ESO awarded approximately 53,000 purchase requests worth better than 73 million dollars. This meant that at any one time there were approximately eight to ten thousand purchase requests in process within the procurement department or somewhere else in ESO. Because ESO was limited by manual operations, statistical samples were taken and analyzed to give work load processing times. As mentioned

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[1]Reynolds, "Procurement by Objectives", pp. 16-19.

earlier, this was a time consuming process, and the information obtained was obsolete by the time it was generated. And, more important, exceptions to normal processing time frames were only discovered after the fact, not during the process.

Mr. Charles Reynolds states in his article that MOTOR indicates exceptions to the normal processing time frames and makes it possible for management to pinpoint the bottleneck where these exceptions are occuring by bringing only the exceptions to managers' attention. The ESO procurement management information system observes the average age of requisitions, pinpoints where excessive delays occur, and indicates the average age of requisitions that are back ordered for an excessive period of time. The system also indicates on an exception basis individual purchase requests that exceed normal award time frames. Armed with this information, managers can determine corrective action and reduce the throughput time which means less cost and faster service to customers. MOTOR employs a major computer system utilizing real-time concepts and requires approximately two hours of processing time monthly to generate the required reports. The system uses basically the standard management systems now in effect (MILSTEP, MILSTRIP) for the data base. By a process of updating data in one particular data element block, a comparison can readily be obtained between

the data of current and past actions, including their dates of initial receipt and their throughput time frame.

Currently, the system is not producing 100 per cent accurate information, due, basically, to operator input mistakes and machine errors. However, problem areas have been located and increased quality control efforts are in effect. "By highlighting the exceptions, MOTOR enables ESO management to make better and more responsive support decisions."[1]

Naval Supply Center Long Beach[2]

Naval Supply Center Long Beach, being one of the high volume purchasing activities action-wise (the fourth largest in the Navy in Fiscal Year '69)[3], found it advantageous to automate certain statistical and reporting management information functions. Lieutenant Robert Crooks indicates that before this an ever-increasing amount of buyers' time was being consumed in the manual reporting of individual procurement actions. They had problems compiling all of the buyers' reports as well as stratifying the data for the Monthly Procurement Summary of Actions under $10,000 (DD Form 1057 Appendix I, and the Purchase Statistics, NAVSANDA Form 80, Appendix III).

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[1] Ibid., p. 18.

[2] Robert Crooks, Jr. Lieutenant, Supply Corps, United States Navy, "The Name of the Game in Purchase Control," Naval Supply Corps Newsletter, (March, 1970), pp. 24-25.

[3] "Survey of Procurement Statistics," pp. 9-10.

Subsequently, Naval Supply Center Long Beach developed a procurement management information system that would give management a mechanized listing of all data elements necessary to complete Appendix I and III. The basic data input for the system is contained on a locally generated keypunch guide called "Purchase Request Traveler Card", (Appendix XI). Through the various computer programs, all necessary information is extracted and summarized for the end of the month reports. An obvious benefit of this particular informations system is that it reduces the clerical effort required for monthly reports; in fact it frees two people for assignment to other functions.[1] Purchase organizations like the Naval Supply Center Long Beach normally consist of approximately 45 employees; thus, having the capability to reduce the size of the organization by two in the case of a reduced work load or to gain two employees when the work load is increased is a tangible benefit of a procurement management information system of this type.

The procurement management information system employed by the Naval Supply Center Long Beach has an output of six separate management reports or tools as a result of input data from the Purchase Traveler Card and an additional input control card. These reports consist of the (1) Daily List of Completed

[1] Crooks, "Name of the Game," p. 24.

Purchase Actions, (2) Daily Buyers' Report, (3) Requisition History and Status File Feedback, (4) Daily Backlog Report, (5) Buyer Backlog Report and (6) Weekly Aging Report.[1]

A brief description of each of these reports will indicate the type of information Naval Supply Center Long Beach considers necessary to achieve effective appraisal and control of the procurement function.

Daily List of Completed Purchase Actions

This listing provides such data as the requisition number, the purchase number (PIIN or imprest fund number, as applicable), the requested delivery date, the delivery date obtained, the priority and the name of the manufacturer. Since this listing is a current report of completed requisitions, it is provided routinely to the Shipyard and to other customers upon request.

This listing serves two purposes. It is utilized by the Purchase Department in lieu of a manual log for purchase actions. And, coupled with Naval Supply Center Long Beach's unique PIIN numbering system, it provides an excellent feedback for status and buyer implication if any administrative action should be necessary.

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[1] Ibid.

Daily Buyer's Report

This report provides management with the number of completed actions listed by type of actions; i.e., purchase order, blanket purchase agreement, imprest fund, etc., for incorporation into the DIMES reporting system.[1] It also provides a ready guide to the Purchase Department management team by informally reviewing the production rate of buyers.

Requisition History and Status File Feedback

Simultaneously with the preceeding two reports, the computer furnishes status for the requisition history and status file which is an integral portion of the Uniform Automatic Data Processing System for stock points. This provides the Procurement Instrument Identification Number and delivery date obtained from the buyer for automatic status to the requisitioner.

Daily Backlog Report

This report is primarily furnished to the Shipyard, and lists by type code, a code that indicates to the Shipyard whether it is a production, overhead, or shop store procurement. It also lists this information by requisition number, so that at any point in time the Shipyard knows exactly which documents are in procurement and can expedite action should the occasion

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[1]Defense Integrated Management Engineering System.

arise.

In addition to the daily reports, two weekly reports are made. These are primarily used for planning purposes as opposed to the response oriented reports explained above.

Buyer Backlog Report

This report lists by individual buyer the number of line items currently in process and also the requisition number of the requirement for these items. Individual listings are used to equalize workload and control distribution of documents.

Weekly Aging Report

This report is probably the most important single output of the computer with respect to the management control system. This report lists the age of the oldest document in the Department and progresses forward to the newest document. It shows the requisition number, the buyer who has it, and the capability of reflecting if a formal quote is pending.

The Daily Completed History records are accumulated into a Monthly History Record, which is broken down by requisition and purchase order numbers. In addition to eliminating manual logs for these two items, the requisition purchase history is provided to the Customer Services Division for their efforts in follow-up action for their customers.[1]

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[1] Crooks, "The Name of the Game", p. 25.

LT. Crooks feels the management information system
employed in the procurement organization at Naval Supply Center
Long Beach provides an invaluable management tool having direct
benefit for managers within the procurement organization as
well as customers. He also states, "In the current environment,
it is extremely important to know where each and every document
is at any point in time, and, once completed, what was done
with it and why, how long it took, and the ultimate conclusion
of the transactions."[1]

[1]Ibid.

CHAPTER V

PROPOSED MODEL

Introduction

As mentioned earlier, a Navy wide procurement management

information does not exist. Because of the wide diversity of

functions and operational commitments manifested by the various

system commands of the Navy, it also seems unlikely that a

Navy wide procurement information system will ever become a

reality. Not until the state of the art of computer technology

and the resources available from Congress allow for the exchange

of data tapes or the transmission of data over some form of

communication link, either wire or air, will an effective

management information system be practical and meaningful for

the Navy establishment.

The Navy field purchase organization, composed of the

activities listed in Figure 9 is a fruitful area for the

design of an effective procurement management information

system.[1] These activities are under the operational control of

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[1] "Survey of Procurement Statistics", p. 6.

the Naval Supply Systems Command. The Supply Systems Command
ranks second in total dollar expended but first in number of
actions as illustrated by Figure 9.

Statistics (Figure 8 and 9) readily reveal that the
Supply System Command could benefit from a uniform information
system allowing for the transfer of information from remote
activities to the headquarters and at the same time providing
meaningful management to that activity itself. Most of the
activities composing the field purchasing systems have computer
complexes of varying size and capabilities. Therefore, a
procurement management information system would have to be
designed which had the capacity and time available for computer
work and which also could meet the needs of the procurement
organization.

Costing-out of an information system is difficult
because, although actual man hours expended can be readily
estimated, this expenditure must be balanced against the
benefits of the system. To place a dollar and cents price tag
on how much an organization is benefitting from an improved
management tool is difficult. One of the primary reasons for
automating is to generate savings; yet often after functions are
automatic, a supervisor will still attempt to maintain his
existing staff, indicating the automated function required

little of his time or resources.

Data-file Creation and Maintenance

Information systems are based on data files. These files are a collection of data arranged on some form of computer storage device; (e.g., magnetic tape, disk or drum). For example, the data file for a procurement information system would contain such items as the purchase instrument identification number, delivery dates, bid opening dates, etc., to name just a few. Establishment of a data file is costly and maintenance requires expenditure of resources as long as the system is in existance.

Maintaining a data-file also requires established procedures for data gathering and input. If departments other than purchase are involved, more effort has to be expended in developing and implementing data collection procedures. Automated systems also must have well-defined quality control procedures for assuring that data will be introduced correctly into the system. While it is possible to write a computer program to validate certain data elements, quality control is basically a manual operation.[1]

Output Results From Input Data

The old saying is very applicable when discussing the benefits of computers, "garbage in, garbage out". Meaningful

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[1] Arthur D. Little, Inc., Information Handling Capabilities, "Preparation Processing Analysis", (General Memorandum No. 35, March, 1963), p. 4.

data cannot be obtained from the system unless it has previously been inputted into the computer in some meaningful form. One of the rules of designing an information system is that it is impossible to determine what outputs are to be produced without first determining how much it is going to cost to introduce the data elements necessary to produce the desired output.

Codes

Most information systems are based on a large number of codes. Codes are a form of short hand enabling the communication of information with a minimum of numbers or characters, and are used to identify problems, shipping methods, procurement methods, and the like. The extensive use of codes is one characteristic of information systems.

The primary reason codes are employed is to decrease keypunch time; also there is an 80 character limitation on an EAM card. It is much faster and easier to keypunch 67468 than "Timeless Tire Auto Industries, Inc." Computers, themselves, function faster because they are based upon coded information.

An information system design should be based upon established codes; thus, re-education is reduced, as well as errors. Presently, each of the various automated systems employed by the Navy; (e.g., MILSTRIP, MILSCAP,[1]) has its own

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[1] Military Standard Contract Administration Procedures.

set of codes. One of the codes used by both systems is that of

the <u>Code to MFRS</u>.[1] These codes identify vendors for accounting

and identification purposes.

Operating Personnel

Procurement information systems should be designed

for people; they should assist the operators.

Model

The author, upon learning of his candidacy for

post-graduate school and with the approval of the director of

procurement, Naval Supply Center Puget Sound, began work on a

research project related to procurement management information

systems, having in mind a thesis project, which would at the

same time provide a useful management tool for the Navy

Department. The research project was initiated at this time

because of the availability of clerical and support personnel,

as well as a computer analyst to write computer programs for

the models developed.

ASPIRE (Automated Status of Purchase Information

Recorded Electronically) resulted from the research project and

provided a vehicle to fill the gap created by the lack of

adequate management information with which to control and appraise

the effectiveness of a procurement organization in the Navy

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[1] U. S. Department of the Army, <u>Federal Supply Code for Manufacturers United States and Canada, Cataloging Handbook H 4-1</u>, (Washington, D. C.: Government Printing Office, 1967).

field purchase organization. Procurement organizations without the aid of a computer have definite problems and limitation as to the amount and timeliness of the management information for planning, control, or operations they are able to accumulate.

. Problems

One problem faced by managers is determining procurement lead time, that is, the length of time required to process a requisition from the moment a request is received until this order or contract is placed. This particular information is required by higher command. And, without the use of some form of automated·system, supplying of this information requires the expenditure of additional resources.[1] This is because without the use of a computer, the method of determining response time is really an after-the-fact audit. Such an audit means additional and duplicated effort after the information has been extracted during performance, and there is a build-in time lag. Often months lapse between audits; thus, the manager is without current information as to how well or how poorly his organization is performing.

Manual systems employ some forms of tickler file to retain control and status of procurement request progress through the buying operation. As the procurement request progresses from stage to stage, the status information is

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[1]Ward, Interview.

retained in a file to answer any questions or inquiries.
Retention of this completed information means that in order to
remove a set of documents that have been completed over a
specific length of time, one must search through the complete
status file.

Requisition aging presents the greatest challenge to the
procurement manager. Requisition aging means that the procurement
action is being delayed for a multitude of reasons and could
mean that the material will not meet the required delivery
date. Without the benefit of an automated information system,
compiling aging data is difficult and time consuming.

Still another problem facing the manager is that of an
effective procurement history file. Navy directives have
indicated that procurement organizations must maintain and
utilize procurement history files.[1] These files serve as guide
lines when buying like or similar material and permit price
comparisons between quoted prices and former purchase prices.
A major problem is properly maintaining and updating these files
to include the latest information. A truly integrated
information system would also have the capability of

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[1]U. S. Department of the Navy, NAVSUPNOTE 4200 of 25
April 1968, Validation of Price Estimates/Price Histories Received
with Purchase Requisitions, (Washington, D. C.: Naval Supply
System Command, 1968).
    U. S. Department of the Navy, NAVSUPNOTE 4200 of 7 Feb.
69, Retention of Procurement History, (Washington, D. C.: Naval
Supply Systems Command, 1969).

introducing market conditions and trends on the various commodities to give a truer picture of how much the material or service should cost.

If an extensive cross reference tickler file is not maintained, there is no way of locating a particular procurement action request, utilizing the procurement request number only once the file copy with this number and procurement instrument identification number has been destroyed. Completed procurement actions are filed according to their Purchase Instrument Identification Number. Thus, if a particular ship or naval activity desires status on one of their requisitions and they only have the requisition number, the procurement organization could not possibly comply without an extensive file search, which would be expensive and then not entirely sure of success.

A major problem with most supply centers is getting procurement requests into the requisition history and status file. (A uniform computer program utilized by all supply activities in the Navy is used to process normal issues from stock.) Often a procurement activity, if it does have an automated information system, functions as a separate unit and is not integrated through the MILSTRIP procedures into the Navy wide logistics system.[1]

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[1]Robert Kreimer, personal interview, Ft. Lee, Virginia, October, 1968.

Areas of Improved Management

Information systems utilizing the computer and EAM procedures have capability for the collection of statistical data automatically which is vastly superior to manual systems. Statistical data is important to managers, because it is through the statistical data they submit to higher authorities that staffing and operational decisions are made. Often the task of collecting and forwarding the data is accomplished by lower paid employees with limited experience and knowledge of the importance of the figures generated. Thus, a system developed around the required statistical data would be of great benefit to the procurement managers.

Another benefit of a procurement management information system would be the automatic input of procurement status in the various Navy wide systems listed below:

Military Standard Requisitioning and Issue Procedures (MILSTRIP)[1].

Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP)[2].

Military Standard Contract Administration Procedures (MILSCAP)[3].

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[1] Military Standard Requisitioning and Issue Procedures (MILSTRIP) establishes procedures for the way material is requisitioned and issued.

[2] Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP) reports actions that increase or decrease the stock position of an item to the inventory control point.

[3] Military Standard Contract Administration Procedures.

Uniform Material Movement and Issue Priority System (UMMIPS)[1].

Automatic Digital Network (AUTODIN)[2].

Locally Generated Status Systems

The real objective on any management information system is to provide the manager with an effective tool, thus enabling him to better manage or allocate his human resources. Effective management of buyers is accomplished by effective work load distribution, accompanied by knowledge of each requisition that has been assigned to the buyer. If the buyer is proceeding with the procurement in an orderly fashion, no action is necessary on the part of the manager. However, a good system sill indicate any difficulties that should be brought to the attention of a supervisor.

System Objectives

For a Navy field purchasing activity, the objectives of a procurement management information system can be broken down into (1) the rapid accumulation and accessibility of data, and (2) a provision for direct automatic input to various other

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[1]Uniform Material Movement and Issue Priority System (UMMIPS) is a DOD system designed to assure that requirements are processed in accordance with established time frames. See Appendix XIX.

[2]Automatic Digital Network (AUTODIN) is a communication network that provides high-speed data transmission facilities between the data processing system of DOD activities.

systems and subsystems as illustrated in Figure 15. Subordinate
objectives under the broad objective of rapid accumulation and
accessibility of data include the following:

* Evaluate buyer performance.

* Reduce cost of the commodities or items being purchased.

* Provide workload scheduling tools.

* Eliminate manual files.

* Improve report accuracy.

* Optimize customer status.

The system objective of providing procurement statistics
in direct computer print-out format to other Navy wide systems
is only now performed by a few out of the many activities
composing the field purchasing activity. It is through these
data links that errors are reduced and individual workloads
lightened as the process of transcription and subsequent keypunch
operations are eliminated.

System Design:

The model has been designed around the capabilities of
an IBM 1410 computer. Figure 14 below is a diagram of the
basic model with input from the purchasing department and
resultant daily, weekly, monthly and quarterly output reports.

Purchase Dept.
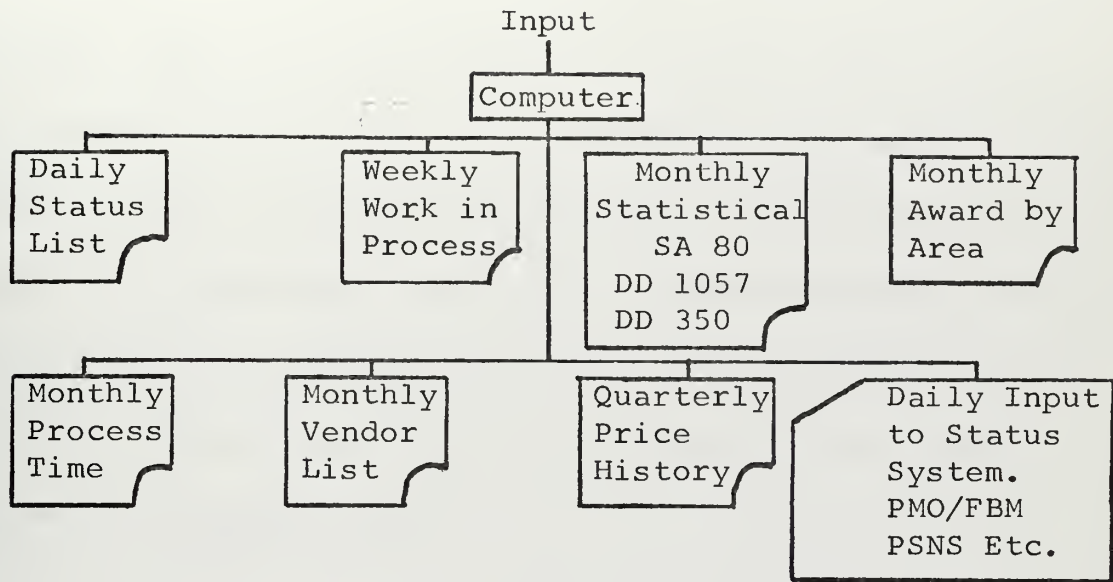
Input

Figure 14
Proposed System

Another graphic representation of the model is

Figure 15. The computer, on a daily basis, processes the purchase

input cards (Appendix XII), and, in conjunction with the

previous day's daily master listing, generates the daily status

list. It also generates daily properly punched EAM cards to

feed customers status which is computable into their data

processing system. Also, the computer generates a new and

updated daily master file. On a weekly basis, the system

generates the weekly Work in Process Report.

On a monthly basis, the daily master file undergoes a

purge or wiping clean of all completed procurements, and this

forms the data base for monthly reports. Reports that are

generated monthly are: (1) statistical, (2) awards by area, (3) purchase processing time, (4) price history, (5) monthly completed, and (6) a new updated daily master file. Each of these reports will be discussed separately. In support of the proposed model, a vendor identification file was created. In doing this, traditional electronic accounting machine equipment and procedures were used, since this function requires only processing and sorting to develop the vendor lists, and no computing. (Appendix XIII)
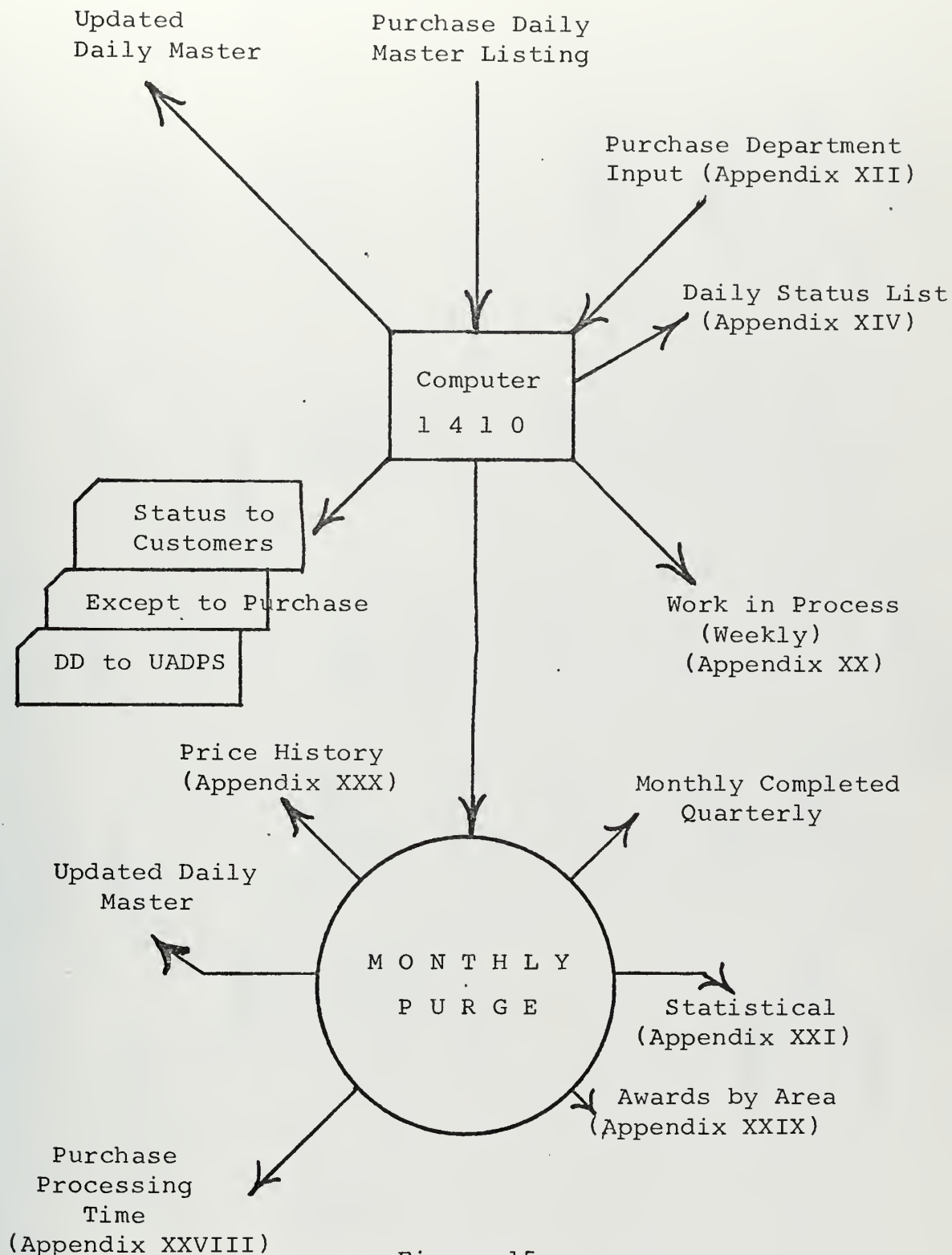
Figure 15
Proposed Model

V E N D O R   I D E N T I F I C A T I O N   F I L E
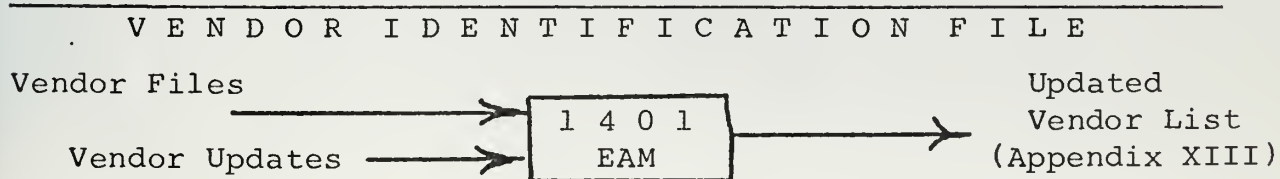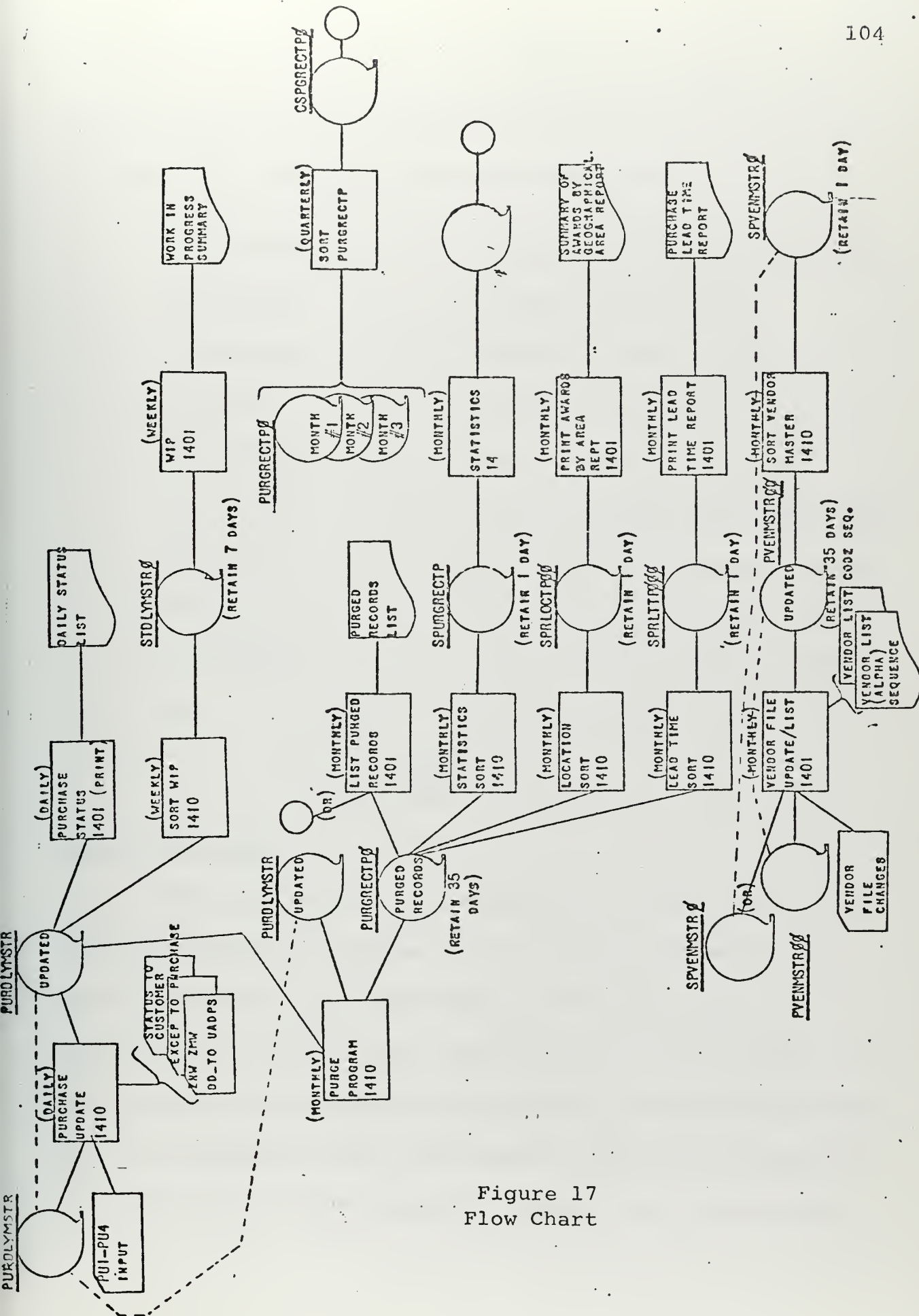
Figure 16

Figure 17
Flow Chart

A more detailed graphic illustration of the proposed model utilizing computer programming symbolism is demonstrated by Figure 17.   Below is a cross reference guide.

CSPGRECTPØ	Consolidated Purged Record Tape
PURDLYMSTR	Purchase Daily Master
PVENMSTRØØ	Purchase Vendor Master
PURGRECTP	Purged Record Tape
STDLYMSTRØ	Sorted Daily Master File
SPRCTTPØØØ	Sorted Purchase Lead Time Report
SPRCOCTPØØ	Sorted Purchase Location Report
SPURGRECTP	Sorted Purchase Record Tape
SPVENMSTRØ	Sorted Purchase Vendor Master
WIP	Work in Process

Figure 18
Flow Chart for System

Daily Status List

The daily status listing provides the data base for an effective information system. It is already reference and a cross reference for all requisitions currently under procurement, as well as those completed during the current month. Data elements comprising the daily status listing must encompass codes or information which can answer a multitude of questions from both customers and managers. Appendix XIV is an example

of the daily status list. It includes the following:

*Document number - The document control number is assigned

by the customer for his own internal use. This number

generally follows the prescribed format called for

in Military Standard Requisitioning and Issue

Procedures, that is, it consists of a service

designator code, followed by a unit identification code,

the Julian date, and the serial number.

*Folder number - Folder numbers are the result of procurement

request consolidation and computer keying. Often many

individual requests for the same or similar material

are consolidated into one procurement action. For

example, a requisition for a particular size of steel

bar and requisition for a different size of the same

kind of steel bar would be treated as one procurement

action with two line items and would be combined into

one folder.

*Priority - The Uniform Military Material Movement and

Issue Priority System has established priority ratings

useful for the procurement managers. Within each

priority rating a specific time frame has been established

indicating when delivery of the material or service is

desired. Higher priority requisitions require special

handling because of their reduced time frames; therefore, they result in a negotiated procurement since formal advertising is a much more lengthy procedure.

Date Received Within the Procurement Organization - This date is important because it is used to measure how rapidly procurement request documents are transformed into actual codes, contracts or other procurement actions. Often generated procurement requests are not processed in a timely manner before arrival at the procurement organization. Then, if this date is not noted, the procurement organization often becomes the victim of abuse when the facts would prove that others beforehand were responsible for the delay.

Buyer Code - Each buyer in a Naval organization is assigned an individual code which facilitates mail handling of returned correspondence from potential vendors. The buyers code is a method of tracing a procurement instrument and placing responsibility.

Required Delivery Date/Date Material Required PDD/DMR - Often the time frame specified for a particular priority, justifiable under the Uniform Material Movement and Issue Priority System, will not satisfy the operational commitment of a Naval activity. If a situation of this

nature develops, procedures allow for the establishment

of a time frame shorter than previously established

by the priority designator.

*Customer Code - Customer codes are employed as a method

of work load stratification. They indicate the source

and percentage of a procurement organization's work

load. For example, a typical breakdown would be thirty

per cent support of fleet units, forty per cent support

of aircraft and thirty per cent support for shore

establishments. With information of this type, managers

have a better understanding of where to apply resources.

*Purchase Instrument Identification Number (PIIN) - This

number is the basic identification number utilized by

the procurement organization when referencing a

particular procurement action. A procurement request

can be assigned one number when quotations are being

solicited from vendors and another when a contract or

order has been completed.

*Open Call Number - Government procurement has a contracting

device similar to a department store charge account,

allowing for the placement of small orders (under $250)

with just a phone call. The vendor has a basic

contractural agreement with an assigned contract number

and each order against this agreement is assigned an

open call number for invoicing and accounting purposes.

*Vendor Code - Again, because of the limited space on an 80

column EAM card and because it is easier to use codes

with computer program design, each vendor doing

substantial business with the Government has an assigned

five-digit code.[1] If no code has been assigned previously,

it is mandatory that one be assigned. And, a cross

reference listing for coding and decoding must be

published for all interested parties.

*Estimated Delivery Date - This particular date is

established at the time of award. Its function is to

(1) key the MILSTRIP system for proper output and (2)

notify the customer when to expect the material.

*Solication Method - Solication method coding is assigned

by the buyer at the time of receipt of the purchase

request. The buyer makes a tentative decision on how

best to proceed with the buy, taking into account the

priority and estimated money value of the commodity.

Appendix XV is a listing of the solication method

codes. This particular coding serves the dual function

of (1) providing status to customers, and (2) providing

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[1]Federal Supply Code for Manufacturers H 4-1.

a keying operation for the computer to compile the
required statistics. By providing the customer with
the solication method code, the procurement organization
informs the customer what particular method of buying
will be employed. If the coding indicates formal bid
procedures on a written solication method, the customers
can anticipate receipt of further status in the form
of an IFB number, which will also tell him the bid
opening date and the total time frame for the purchasing
action (from two to six weeks, depending on complexity
and lack of complications) that can be expected.

*Refer Delay - Refer delay coding is used primarily for
customer status and supervisor information. During the
process of a procurement action, it is often necessary
to refer the request back to the originator for
additional information or for specification clarification.
By employing coding as indicated in Appendix XVI,
procurement organizations can adequately inform interested
customers of procurement status and thus allow for
better planning.

*Industrial Problems - An industrial problem coding system
should be similar to the refer/delay coding, but broken
out under a separate heading for ease of supervisor and

customer identification. The primary reason for having such a separate coding system is so that if required the buyer or contract administrator can indicate if a vendor is on strike, for example, or having some other difficulty which might affect availability or delivery. Appendix XVII is a typical listing of codes that might be employed for this purpose.

*Cancel Code - Cancel codes perform the dual function of providing customer and supervisor status and information and keying the computer for statistical purposes. A typical list of situations which might require the use of a cancel code is found in Appendix XVIII.

Daily Work In-Process Summary

Managers of procurement organizations need to know the extent of their work load input and output. The total number of requisitions received plus the number being processed and less any awards or cancellations equals the number outstanding at any given moment; it is this figure which is important in work assignments and department management. Procurement managers also must stratify the work load according to priority and departmental division. Higher priority requisitions require different methods of operations and thus, different planning and management than lower priority requisitions. Thus, by

observing trends, managers can better utilize their resources.
To be sure, procurement organizations can function without the
use of daily work in process summary, but they can optimize
their resources if this information is available. Appendix XIV
is a sample of a daily work in process summary employed by the
procurement management information system model (ASPIRE).

* <u>Departmental Division</u> - Each division within a procurement
organization operates more or less independantly.
Responsibility for particular action is passed from one
division or another. Not all procurement organizations
employ the same organizational structure; some, for
example, combine functions and have the buyers perform
the contract administration function. However, this
affects neither the concept of the model nor the
information obtained.

*<u>Received</u> - This refers to the number of procurement request
documents or actions received in the organization for
the time frame, be it daily, weekly, or longer.

*<u>Quote</u> - This is the number of procurement actions that
basically are in a hold status while awaiting time to
pass, allowing vendor to reply to the request made of
them by quoting on various items the organization is
buying.

*Awards/Completed - The number of purchase orders written,

orders placed and contracts written, i.e., the number

of award actions is tabulated in this column.

*Cancelled - The number of procurement actions cancelled

for any of the reasons listed in Appendix XVIII is

tabulated in this column for information and control

purposes.

*Outstanding - The number of receipts less the number of

completed actions less the number cancelled actions

equals the number of actions outstanding; thus, at

a glance, a manager can see and graph the daily, weekly

and monthly progress of the organization.

*Daily - As various procurement actions, i.e., receipts

and awards, take place, they are tabulated in the

proper column of that particular action.

*Cumulative - Daily transactions are carried forward and

tabulated cumulatively for each of the areas of interest.

*Issue Group - See Appendix XIX.

Weekly Work in Process

The weekly work in process report is a unique report

employed in the ASPIRE model which is intended to serve as an

active management tool by using specific data elements to indicate

a problem or potential problems. Every week, for example, the

information system will generate a listing for each buyer of the folders and procurement requisitions assigned to him for action. The buyer will verify the listing against his workload and thus provide a check in the system for errors. If errors are located, they are corrected, and the correct data is entered into the system. The supervisor also receives a copy of this listing. He is interested in noting whether the work load between buyers is balanced, and more significantly from a management viewpoint, whether there is any coding located in the problem column.

Problem coding is the most useful management information tool of the entire model. As a buyer performs the buy functions, he must meet certain dates and time frames, which have been established either by UMIPS or by himself, for example, in the setting of a bid opening date. The problem code indicates to the manager that something has gone astray, and the buyer has missed a date or time frame.

Setting time frames is one of the most difficult system design objectives. Certain buying functions are of such a routine nature that job standards have been developed.[1] Such functions are generally those involved in the small buying operation and the placement of orders rather than the letting

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[1] Defense Integrated Management Engineering System.

of weapons systems type contracting. Because of the multitude
of problems that must be solved during the process of awarding
a contract, standards of buyer performance become meaningless.
If difficulties arise, the work expended on a $50,000 contract
could, conceivably, be more than one for $500,000; thus,
establishing work standard stratified by money value is not
possible. However, how well a buyer processes the necessary
documentation and meets established dates and time frames
can be measured easily. For example, the bid opening date, or
the time required to make an award after bid opening (normally
two weeks) can be a measurement of a buyer's performance, a
good indication if any problems are developing with a
particular procurement requisition, and a possible cue that some
action is necessary by management.

Data elements for the weekly work in process report
are similar to those of the daily status report. Appendix XX
is an example of a weekly work in process report envisioned
by the model. Workable and unworkable backlog count is a new
concept. A workable requisition is one that requires some form
of procurement action or decision; whereas, an unworkable
requisition is one that is in hold status awaiting a time frame
to pass. For example, allowing vendors ten days to reply with
a price quotation for desired items would result in the

procurement action being unworkable for that ten day period.

Monthly Statistics

Certain periodic statistics are required to be submitted

to higher authority (Appendix I and III). Appendix XXI

employed by the model would be a typical example of the compilation

of monthly statistics. A truly Navy wide procurement

management information system would have the capability of

transmitting the data contained in Appendix XXI via the AUTODIN

network directly to centralized data collection centers for

further processing and refinement, resulting in the publishing

of required information by the Naval Material Command for

submission to higher authority. Appendix XXI could,

conceivably, be modified by a minor change in system design

to allow for direct print out of information eliminating the

necessity of transcription onto other forms. What is important

is that the system would have the capability of collecting the

required information and displaying this information in a

useful manner. Data elements necessary to obtain the proper

stratification of information in addition to the ones already

discussed in the model include the ones found in Figure 19

below.

1. Amount

2. Vendor Size   Appendix XXII

3. Purchase Type   Appendix XXIII

4. Negotiations Authority   Appendix XXIV

5. Purchase Method   Appendix XXV

6. Transaction Code   Appendix XXVI

7. Vendor Location   Appendix XXVII

Figure 19
Data Elements

Purchase Requisition Lead Time Report

One of the most valuable pieces of management

information is the length of time required to perform a particular

function. Without this basic knowledge or bench work,

performance improvement or deterioration cannot be judged.

Often, managers will average the number of days it takes to

perform a particular process, but this average only indicates

a portion of the picture. A procurement action requiring three

times the normal time will completely megate outstanding work

performed on six actions requiring half the normal time; thus,

an information system should supply more than the average number

of days.

The Purchase lead time report is structured in such a

way as to still satisfy those who want to know the average

lead time. In addition, it gives a better picture of the actual
processing time by grouping all purchase orders of a given
type together, sorting that group into the number processed
in one day, two days, three days, etc., and displaying this
information. Using the data collected, it becomes easy to
construct a graph and locate the median and mode which gives a
better picture of the processing. The report format in
Appendix XXVIII generates breakdown by purchase type and method
of solication methods.

Awards by Geographical Area

Statistics are normally collected and reported for the
amount of money spent outside the United States. These
statistics are useful in computing the fold flowing to and from
the Treasury. Since this is a required data element, the
model expanded the use of this code to include the standard
state codes used in other management systems, plus a few locally
generated codes. This is nice to know information that is seldom
utilized but is easily generated as a by-product of the information
system. At a glance, the contracting officer will be able to
tell Congressmen or Senators the amount of money expended in
their state or district. Appendix XXIX is the sample format
for the report.

Price History File

As previously mentioned, the price history file has taken on renewed emphasis. The major problems that must be solved in the design of a price history file are the establishment of a data base, the maintenance of the data base, and the retrieval of the information. Often price history files are maintained on a manual basis, requiring the recording of subsequent information by hand. A problem with any manual system utilizing folders is that material is often misfiled or not filed at all, but the major problem developes when the buyer wants to compare prices with previously purchased commodities. Finding the folder or folders containing the desired information becomes more time-consuing than the buyer can afford.

Therefore, a price history file, to be a useful tool, must be simple and easy to use. It must be maintained by automated means so that all data is recorded, and it must have a standardized format. The model utilizes four sub-grouping for the price history file. (See Appendix XXX).

Federal Stock Number Sequence is the easiest to code and maintain. If an item has sufficient usage in the military and Federal Government, it is assigned a multi-digit number unique to a particular part or material. Thus, when this item

is purchased, it is classified according to its stock number.

When another item is purchased under the same stock number, it

will appear on the price history file below the first entry.

Armed with the price history file, the buyer can now determine

how many items were purchased at what price, who the vendor

was, the date, plus the purchase instrument identification

number for further reference.

Part number sequence is more complicated than the

Federal Stock Number Sequence. Parts that need replacement are

not always assigned a stock number but instead use the

manufacturers' part number. Several manufacturers may give the

same part a different part number. Therefore, this section is

arranged, first, by the manufacturers' identification number

(the same number used in the daily status listing and the vendor

list) and then by the individual part number. The purchase

request will indicate the manufacturer and the part number

desired. All the buyer must do is check the price history file

to determine if this item had been previously purchased.

Nomenclature sequence is, by far, the most difficult

to establish and maintain. An example best describes the

problem. A buyer has a requisition for a three inch brass ball

valve with a working pressure of 150 psi with flanges. Three

people would probably code this valve differently; i.e.,

1)   Valve, three inch, brass, 150 psi, flange

2)   Brass valve, three inch, flange, 150 psi

3)   Three inch valve, brass, flange, 150 psi.

Therefore, requisitions of this nature must be routed to a

technical department for proper coding.   Note Appendix XXXI.

The input keypunch guide has made provisions for establishing

a uniform format for inputting data into the data bank.   With

uniform coding, the buyer can now search the price history file

and expect the same or similar entries.

Service contracts mark the fourth sequence.   Contracts

and purchase orders that have been awarded for service contracts

are accumulated in this sequence.   Again, coding is important

not as significant as it is in the part number and nomenclature

sections.   It is fairly easy to compare the prices paid for

hauling garbage if all contracts are listed under this heading.

Therefore, this particular format for a price history

file satisfies the requirements placed on the organization from

higher command, but also, what is more important, provides a

tool that is easy to use and maintain because it uses data

elements already in the system for other reports.   Additional

information could easily be added, of course.   But this would

require exceeding the 80 character length of the print out and

using two or more lines of print out per line item.   This would

result in a bigger and bulkier file, which, no doubt, buyers
would shy away from using and thus would defeat the purpose
of the price history file in the first place.

CHAPTER VI

CONCLUSION

Presently each procurement organization within the Navy

Department has developed forms of procurement management

information system designed to meet its needs. These systems

vary in complexity from the simple manual system employed

by the Navy Purchasing Office, Washington, to the complex system

of the Aviation Supply Office in Philadelphia. As complex as

some of the systems are, they still fail to achieve the optimum

traits of an effective procurement management information system.

Weding and Diamond indicate that an optimum system's traits

include: Economy; Management Orientation; Comprehensiveness;

Flexibility, Simplicity and Compatibility.[1] Although these

authors were discussing procurement systems for industry, these

traits also describe the type of information system needed by

Navy contracting Officers.

Economy: An optimumly designed procurement information system

would result in lower cost of operations and less money expended

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[1]Weding and Diamond, "Buy by Computer", p. 114.

in the procurement of materials and services. Currently, the

Navy systems are reducing labor costs, but no appreciable effort

has been expended in the development of a system that will take

into consideration information external to the procurement

organization (i.e., information from the market place) and merge

it with data already generated during past procurements.

Present systems adequately attack the lower cost of operations

but fail in many respects to meet the objective of spending

less money for material and services.

Management Orientation: Of the management systems studied, it

is only the procurement organizations with ADP equipment which

are getting daily status information; manual systems function

with monthly reports. Procurement information systems should

satisfy managers' requirements and desires for both faster

and more accurate information from which to better evaluate the

effectiveness of their procurement organization.

Comprehensiveness: Only major Navy inventory control points

possess an information system approaching a total information

and control system. A truly automated information system would

have data banks of such magnitude that upon receipt of a purchase

request, the computer would write the necessary solicitation

document, make the award based upon pre-selected criteria and

human evaluation, and pay vendor's invoice automatically.
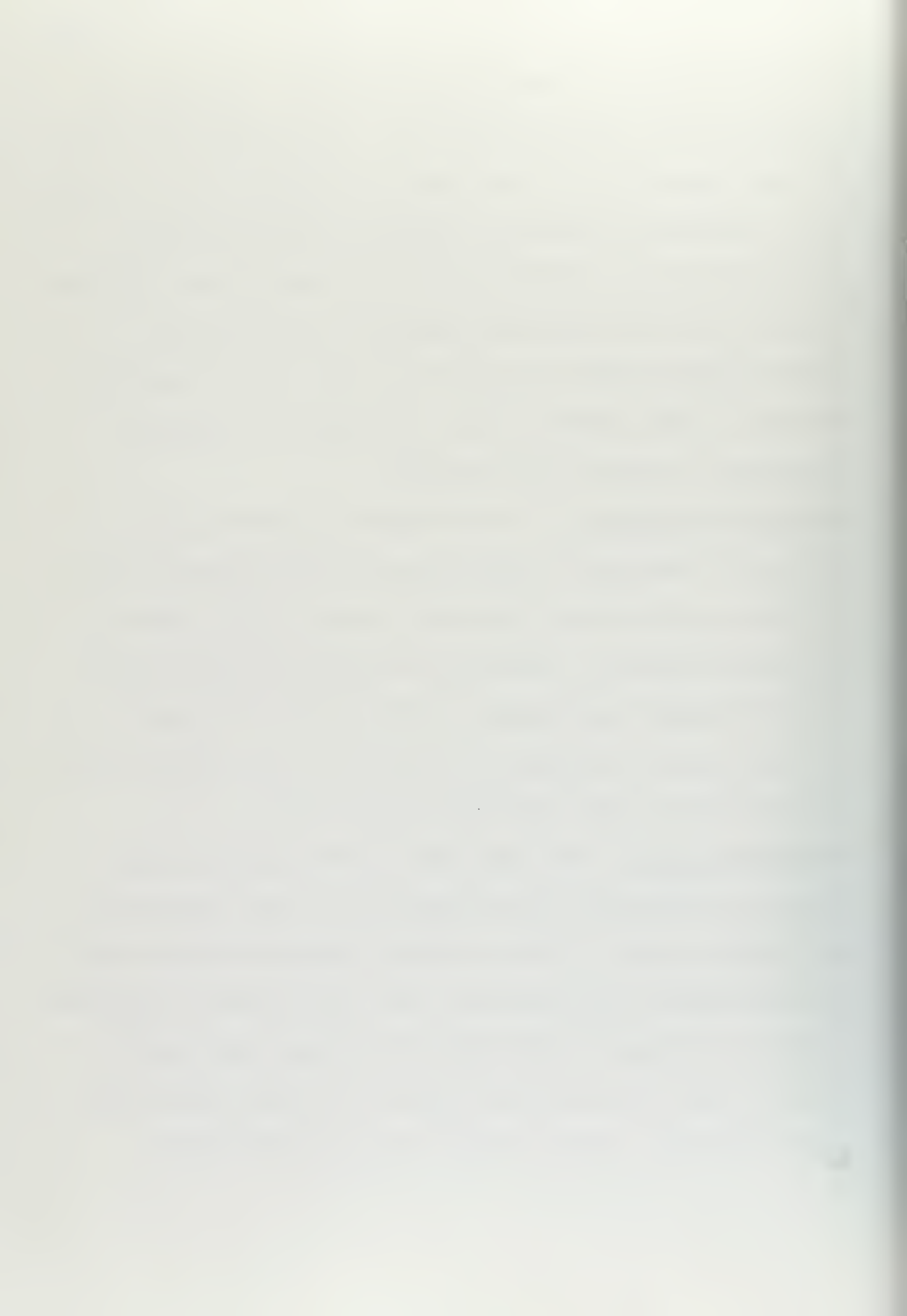
Currently, the small purchase function is automated in some Navy Supply Centers' contracting function; others are currently working on implementation of the MILSCAP information system. However, no one particular procurement organization in the Navy at this time has a completely integrated procurement management information system. The Fleet Material Support Office, having overall responsibility for design of uniform automated data processing procedures and programs, is currently working on a system that will integrate the fragmented programs now in existence into a comprehensive information system.[1] Work is progressing on three different levels. Uniform programs are under development for (1) inventory control points, (2) Navy stock points (supply centers), and (3) fleet units. Because of the wide disparity of operations of these three different types of activities, one system applicable to all is beyond the scope of present resources.[2]

Flexibility: As Weding and Diamond indicate, the optimum system must be able to cope satisfactorily with procurement requests of varying complexity, from the simple oral order via the telephone to the most complex contract for delivery of a Nuclear Aircraft carrier and from rush orders to routine deliveries. To insure the required degree of flexibility,

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[1] Duncan P. McGillivary, telephone interview, Mechanicsbur, Pennsylvania, October, 1970.

[2] Ibid.

procurement should control the system and not be hampered by being forced to comply with design parameters imposed by other systems.

> This (not having procurement control the system) is unfortunate, in that it then becomes necessary to adapt the purchasing information system to the equipment rather than procuring the best designed equipment to meet the needs of the system. Since the purchasing department will be involved in some of the technical procurement details such as placing the order for the equipment, evaluating alternate suppliers, etc., it seems only appropriate that the purchasing agent should anticipate the problems that will arise when his department is designed to use the equipment for its data processing. It is too late to do this after the equipment has been acquired by the accounting department.[1]

Simplicity: When new management systems are designed of the designers, they fail to take into account the human element and how humans react to change. Overcoming the reluctance of people to something new, or to change their ways of doing a particular task will be the manager's biggest problem. Without the full support of the personnel putting information into the system accurately and in a timely fashion, any system is doomed to failure; at best inaccurate output data will be useless for effective management control. Thus, a new system must be simple to operate and easily convertible from the one presently employed. Paramount in system design is ease of

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[1]I. V. Fine and National Association of Purchasing Agents, "The Processing of Data," 1.0 Purchasing Systems and Procedures, Copyright 1965 by the National Association of Purchasing Agents for the GUIDE TO PURCHASING, p. 1.1.15.

Maintenance with adequate checks and balances to insure system accuracy. The system employed by ESO currently is facing accuracy problems. Unfortunately, as the Department of Defense expands the requirements for management information, the systems will become more rather than less complex.

Compatibility: In this particular area, procurement managers currently face their biggest challenge. The system of the future must be compatible with the other existing ADP programs. It must be compatible with all of the current MIL programs; i.e., MILSTRIP, MILSTRAP, MILSTEP and MILSCAP, as well as future programs. This compatibility will depend heavily upon standardization of data elements and uniform operations procedures.

The model developed is an attempt to bring together as many of the optimum system traits as possible within certain design parameters. It was designed to be an effective management tool, to manage by the exception principle rather than create a computer listing of such magnitude that it becomes impossible to handle. It also attempts to solve the major problems procurement managers have in the accumulation, digestion, and dissemination of procurement information. Basically, these problems are (1) work load stratification, (2) backlog size, (3) processing time for various types of procurement actions,

(4) problem procurement requests (if certain actions are not initiated immediately), (5) buyer efficiency, (6) wasting of valuable buyers' time and talent in the maintenance of the information system, (7) interface with present and future uniform automatic data processing systems being imposed by higher authority, (8) maintenance of a functional price history file, and others. These are but a few of the many problems that must be solved by Navy Contracting Officers.

The proposed model is currently undergoing testing at Naval Supply Center Puget Sound in Bremerton, Washington. Appendix XXXII is an excerpt from an article submitted by LCDR W. Hauenstein to be published in the Naval Supply Corps Newsletter.[1] This model does not provide solutions to all of the problems currently facing procurement managers but, nevertheless, is a step in the right direction.

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[1]William Hauenstein, Lieutenant Commander, Supply Corps, United States Navy, Director of Procurement, Naval Supply Center, Puget Sound, (Unpublished draft for Naval Supply Corps Newsletter, 1970).

MONTHLY PROCUREMENT SUMMARY
by
PURCHASE OFFICE

MONTHLY PROCUREMENT SUMMARY OF ACTIONS UNDER $10,000 BY PURCHASING OFFICE	REPORT CONTROL SYMBOL
PURCHASING OFFICE AND MAILING ADDRESS	MONTH ENDING
	REPORTING OFFICE CODE

SECTION A - ALL PROCUREMENT ACTIONS

CATEGORY	NUMBER OF ACTIONS	DOLLAR VALUE
1 WITH LARGE BUSINESS FIRMS TOTAL		
a ADVERTISED		
b NEGOTIATED		
2 WITH SMALL BUSINESS FIRMS TOTAL		
a ADVERTISED		
b NEGOTIATED		
3 WITH EDUCATIONAL AND NON PROFIT INSTITUTIONS TOTAL		
a ADVERTISED		
b NEGOTIATED		
4 FOR WORK OUTSIDE U S TOTAL		
a ADVERTISED		
b NEGOTIATED		
5 INTRA GOVERNMENTAL TOTAL		
a GSA FEDERAL SUPPLY SCHEDULES		
b OTHER		
6 TOTAL (Lines 1 + 2 + 3 + 4 + 5)		

SECTION B - NEGOTIATED ACTIONS

NEGOTIATION AUTHORITY 10 U S C	NUMBER OF ACTIONS	DOLLAR VALUE
1 SECTION 2304 a) (1)		
a LABOR SURPLUS AREA OR INDUSTRY SET ASIDE		
b SMALL BUSINESS SET ASIDE (Unilateral)		??
c DISASTER AREA SET ASIDE		
e BALANCE OF PAYMENTS PROGRAM		
2 SECTION 2304 a) (2)		
3 SECTION 2304 a) (3)		
4 SECTION 2304 a) (4)		
5 SECTION 2304 a) (5)		
6 SECTION 2304 a) (6)		
7 SECTION 2304 a) (7)		
8 SECTION 2304 a) (8)		
9 SECTION 2304 a) (9)		
10 SECTION 2304 a) (10)		
11 SECTION 2304 a) (11)		
12 SECTION 2304 a) (12)		
13 SECTION 2304 a) (13)		
14 SECTION 2304 a) (14)		
15 SECTION 2304 a) (15)		
16 SECTION 2304 a) (16)		
17 SECTION 2304 a) (17)		
a SMALL BUSINESS SET ASIDE (Joint)		
b OTHER		
18 TOTAL (Lines 1 thru 17)		

SECTION C - RESEARCH, DEVELOPMENT, TEST AND EVALUATION ACTIONS

CATEGORY	NUMBER OF ACTIONS	DOLLAR VALUE
1 LARGE BUSINESS FIRMS		
2 SMALL BUSINESS FIRMS		
3 EDUCATIONAL AND NON PROFIT INSTITUTIONS		
4 TOTAL (Lines 1 + 2 + 3)		

SECTION E - RESERVED

CATEGORY	NUMBER OF ACTIONS	DOLLAR VALUE
1		
2		
3		
4		

REMARKS

SECTION D COMPETITION IN NEGOTIATED ACTIONS

CATEGORY	NUMBER OF ACTIONS	DOLLAR VALUE
1 SECTION 2304 a) (1) PRICE COMPETITION - OVER $250		
2 SECTION 2304 a) a) USING SMALL PURCHASE PROCEDURES PRICE COMPETITION - OVER $250		
3 PRICE COMPETITION OTHER THAN 1, 2		
4 OTHER NEGOTIATED		
5 TOTAL (Lines 1 + 2 + 3 + 4)		

DATE SUBMITTED	TYPED NAME AND SIGNATURE	TEL EXTEN

DD FORM 1057   PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

Appendix I

DD FORM 350: INDIVIDUAL PROCUREMENT ACTION REPORT

INDIVIDUAL PROCUREMENT ACTION REPORT			REPORT CONTROL SYMBOL					
1A. REPORT NO. (Current)	1B.	1C. REPORT NO. (Previous)	2. CONTRACT NO			(Army only)		(Army only)
			A. Dept	B. Activity	C. FY.	D. CMD	E. Serial No.	F. NO

Item 3 Code	3. CORRECTION OF PRIOR DD FORM 350 Number _____ Item(s) _____	4. MOD. NO. AND OTHER IDENT.
	1. Corrected entry	
	2. Reversing entry	

Item 5 Code	5. PURCHASING OFFICE AND MAILING ADDRESS

Item 5A Code	5A. SOUTHEAST ASIA (Actions of $200,000 or more)
	1. In support of SEA 0. Not in support of SEA

Item 6 Code	6. CONTRACTOR IDENTIFICATION
	Company Name:
	Division Name (If any):
	Number and Street:
	City and State or Country:

Item 7 Code City / State	7. PRINCIPAL PLACE OF PERFORMANCE (City and State or Country)	7A.	7B.

Item 7C Code	7C. MULTI-YEAR PROCUREMENT
	A. First year B. Second or subsequent year C. Not a multi-year procurement

Item 8 Code	8. SUBJECT TO WALSH-HEALEY OR SERVICE CONTRACT ACT
	A. Walsh-Healey Act, Manufacturer B. Walsh-Healey Act, Regular Dealer
	C. Service Contract Act D. Not subject to Walsh-Healey or Service Contract Act

Item 9 Code	9. LABOR SURPLUS AREA
	1. Labor Surplus Area—No preference 3. Labor Surplus Area—Tie bid preference 5. Not a Labor Surplus Area
	2. Labor Surplus Area—Set Aside preference 4. Labor Surplus Area/Concern individually certified by Dept. of Labor

10A. FSC OR SV CODE	10B. SYSTEM OR EQUIPMENT CODE	10C. DD CLAIMANT PROG. NO.	11. DESCRIPTION OF COMMODITY OR SERVICE

Item 12 Code	12. COORDINATED PROCUREMENT
	1. Procurement Agreement 2. (Reserved – Do not use) 3 GSA Supply Schedule (Enter Code 1 in Item 15)
	4. (Reserved – Do not use) 5. Single Department Procurement 6. Defense Supply Agency 7. Outside U.S. 8. Other

Item 13 Code	13. SYNOPSIS OF PROPOSED PROCUREMENT
	A. Synopsized per E. Not Synopsized; Original Not synopsized per ASPR 1–1003 1 Exception:
	ASPR 1–1003.9 Estimate under $10,000 1 2 3 4 6 7 8 9

Item 14 Code	14. KIND OF PROCUREMENT ACTION	Modification:
	1. Initial Letter Contract 4. Order under Contract	6. Additional work 8. Change Order
	2. Definitive Contract superseding Letter Contract 5. Provisioning Order	7. Funding action 9. Termination or
	3. Definitive Contract (Including Notice of Award)	cancellation

Item 15 Code	15. CONTRACT PLACEMENT
	1. Intragovernmental (Do not fill in items 16 thru 21) 4. Small Business restricted advertising (Fill in all items)
	2. Two-step formal advertising (Do not fill in Items 17 thru 19) 5. Other negotiated (Fill in all items)
	3. Other formal advertising (Do not fill in items 17 thru 19) J. Foreign Military Sales (Do not fill in Items 16 thru 21)

Item 16 Code	16. SMALL BUSINESS
	Awarded to Large Business because Small Business: J. Awarded to Small Business
	A. Not solicited C. Bid was not low K. Awarded to nonprofit institution
	B. Solicited but did not bid D. Bid not accepted for other reasons L. Awarded for work outside U.S. and possessions

Item 17 Code	17. NEGOTIATED UNDER 10 USC 2304(a) EXCEPTION
	For 10 USC 2304(a)(1), ASPR 3–201.2 Citation: Negotiation accomplished pursuant For 10 USC 2304(a)(10),
	1A. Labor Surplus Area or industry set-aside to 10 USC 2304(a) Clause No.: ASPR 3–210.2 Citation:
	1B. Unilateral Small Business set-aside 2 7 12 16 10–1 10–6 10–11 10–16
	1C. Disaster Area set-aside 4 8 13 10–2 10–7 10–12 10–17
	1E. Balance of Payments Program 5 9 14 10–3 10–8 10–13 10–26
	6 11 15 10–4 10–9 10–14
	10–5 10–10 10–15
	Otherwise authorized by law: 17A. Joint Small Business set-aside 17B. Other
	PL 85–536 (Specify) _____

Item 18 Code	18. EXTENT OF COMPETITION IN NEGOTIATION
	Competitive: Non-competitive follow-on action after:
	1. Price competition 3 Price competition S. Other non-competitive
	2. Design, technical, or other competition 4. Design, technical, or other competition

Item 19 Code	19. PROFIT NEGOTIATION (This action only)
	1. Profit negotiated and DD Form 1499 required 3. Profit not negotiated
	2. Profit negotiated but DD Form 1499 not required

Item 20 Code	20. TYPE OF CONTRACT—ASPR SECTION III, PART 4		
	Fixed Price Rede- termination:	Fixed Price Incentive:	Cost-plus-incentive fee:
	A. Type A J Firm fixed price	L With performance incentive R. Cost-plus-award fee	V. With performance incentive Y. Time and materials
	B. Type E	S. Cost contract	
	C. Other K. Fixed price escalation	M. Without performance incentive T. Cost sharing	W. Without perform- ance incentive Z. Labor hour
		U. Cost-plus-fixed fee	

Item 21 Code	21. VALUE ENGINEERING CLAUSE (ASPR SECTION I, PART 17)
	A. Incentive J. Program Requirement S. No value engineering clause

22. DATE OF THIS ACTION Year Month Day	23 EST COMPLETION DATE (Year and Month)	24 TOTAL OF THIS ACTION (Round out to nearest whole dollar) $	24A.

25. TYPED NAME AND SIGNATURE OF CONTRACTING OFFICER OR REPRESENTATIVE	26 TEL. EXTEN.	27. DATE SUBMITTED

DD FORM 350   PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

Appendix II

PURCHASE STATISTICS (NAVSUP FORM 80)

PURCHASE STATISTICS
NAV 5 AND 4 FORM 80 (REV. 8-61)

NAVAL SUPPLY SYSTEMS COMMAND (DEPUTY COMMANDER, PROGRAMMING AND FINANCIAL MANAGEMENT), WASHINGTON, D.C. 20390

REPORTING ACTIVITY: U. S. Naval Activity, Boston, Mass.

N200-3

REPORTING PERIOD: [X] 1ST HALF (JUL-DEC) [ ] 2ND HALF (JAN-JUN) F.Y. 70

		L	JUL or JAN	AUG or FEB	SEP or MAR	1ST QTR. or 3RD QTR. TOTAL	OCT or APR	NOV or MAY	DEC or JUN	2ND QTR. or 4TH QTR. TOTAL	1ST HALF or FISCAL YR. TOTAL
1. SMALL PURCHASES IN THE OPEN MARKET — MADE WITHIN PURCHASE ORGANIZATION — PURCHASE ORDER (Actions) $0-250		1				967				1,018	1,985
$250-2500		2				1,568				1,718	3,286
BPA CALLS (Actions) $0-250		3				568				690	1,258
$250-2500		4				204				252	456
DOLLAR VALUE (000) (Lines 1 Thru 4)		5				803				1,134	1,937
IMPREST FUND — ACTIONS		6				1,234				1,502	2,736
DOLLAR VALUE (000)		7				72				88	160
STANDARD FORM 44 — ACTIONS		8				--				--	--
DOLLAR VALUE (000)		9				--				--	--
MADE OUTSIDE PURCHASE ORGANIZATION — BPA CALLS (Actions)		10				--	•			--	--
STANDARD FORM 44 (Actions)		11				5				8	13
DOLLAR VALUE (000) (Lines 10 + 11)		12				2				6	8
2. ORDERS UNDER CONTRACT — FEDERAL SUPPLY SCHEDULE — ACTIONS		13				529				762	1,291
DOLLAR VALUE (000)		14				272				322	594
GSA STORES DEPOTS — ACTIONS		15									
DOLLAR VALUE (000)		16									
OTHER CONTRACTS — ACTIONS		17				221				301	522
DOLLAR VALUE (000)		18				156				177	333
3. MAJOR PURCHASES — UNDER $10,000 — ACTIONS ADV.		19				45				78	126
NEG.		19				26				30	56
DOLLAR VALUE (000)		20				390				552	942
$10,000 AND OVER — ACTIONS ADV.		21				134				236	370
NEG		21				178				357	535
DOLLAR VALUE (000)		22				4,775				15,924	20,699
MODIFICATIONS $10,000 AND OVER — ACTIONS		23				21				40	61
DOLLAR VALUE (000)		24				296				854	1,150
TOTAL DOLLAR VALUE (000) (Lines 5, 7, 9, 12, 14, 16, 18, 20, 22, 24)		25				6,766				19,057	25,823
4. OTHER PURCHASE DATA — INDEFINITE DELIVERY DOCUMENTS — IDA'S		26				115				32	147
OTHERS		27				--				--	--
EST. DOLLAR VALUE		28				750				215	965
NON-APPROPRIATED FUND PURCHASES — ACTIONS		29				--				--	--
DOLLAR VALUE		30				--				--	--
MODIFICATIONS UNDER 10,000 — ACTIONS		31				193				252	445
NET DOLLAR VALUE		32				409				667	1,076
5. CONTRACT ADMINISTRATION — CONTRACTS OUTSTANDING		33		5,258					5,352			5,310
DELINQUENT 30 THRU 59 DAYS		34		95					80			68
DELINQUENT 60 THRU 89 DAYS		35		36					28			32
DELINQUENT 90 DAYS AND OVER		36		9					9			9
DEFAULT TERMINATION		37		3					5			8
DELIVERY EXTENSION		38		36					53			89
CONSENT CONT'D PERFORMANCE		39		3					2			5
NO COST SETTLEMENT		40		2					3			5
CONVENIENCE TERMINATION		41		4					4			8
PURCHASE SUPPORT ACTIONS (Only)		42				--				--	--
6. PERSONNEL — AUTHORIZED IN PURCHASE — MILITARY		43				3					3
CIVILIAN		44				62					62
TOTAL		45				65					65
ON BOARD IN PURCHASE — MILITARY		46				3					3
CIVILIAN		47				62					61
TOTAL		48				65					64

Appendix III

MONTHLY PURCHASE PERFORMANCE REPORT

NAVSUP Report No.

TO: NAVAL SUPPLY SYSTEMS COMMAND

MONTHLY PURCHASING PERFORMANCE REPORT
(no cover letter needed)

FROM: _____ MONTH REPORTED _____

I. WORKLOAD:

NO. OF REQUISITIONS:	SMALL PURCHASES MAIN OFFICE BRANCH	LARGE PURCHASES	TOTAL
BEGINNING ON HAND	: _____	: _____	: _____
PLUS RECEIVED	: _____	: _____	: _____
TOTAL INPUT	: _____	: _____	: _____
LESS CANCELLED	: _____	: _____	: _____
NET INPUT	: _____	: _____	: _____
LESS COMPLETED	: _____	: _____	: _____
ENDING ON HAND	: _____	: _____	: _____

II. UTILIZATION OF BPA CALLS & IMPREST FUNDS VS. PURCHASE ORDERS

		ACTIONS	
	DOLLAR	NO.	%
PURCHASE ORDERS ($0-250)	_____	_____	_____
PURCHASE ORDERS ($250-2500)	_____	_____	_____
BPA CALLS ($0-250)	_____	_____	_____
BPA CALLS ($250-2500)	_____	_____	_____
IMPREST FUND	_____	_____	
TOTAL	_____	_____	100
BPA CALLS (OUTSIDE PUR. ORG.)	_____	_____	
TOTAL NO. OF BPAS OUTSTANDING		_____	

BRANCH OFFICE
(included in above) _____

Appendix IV

MILSCAP CARD FLOW
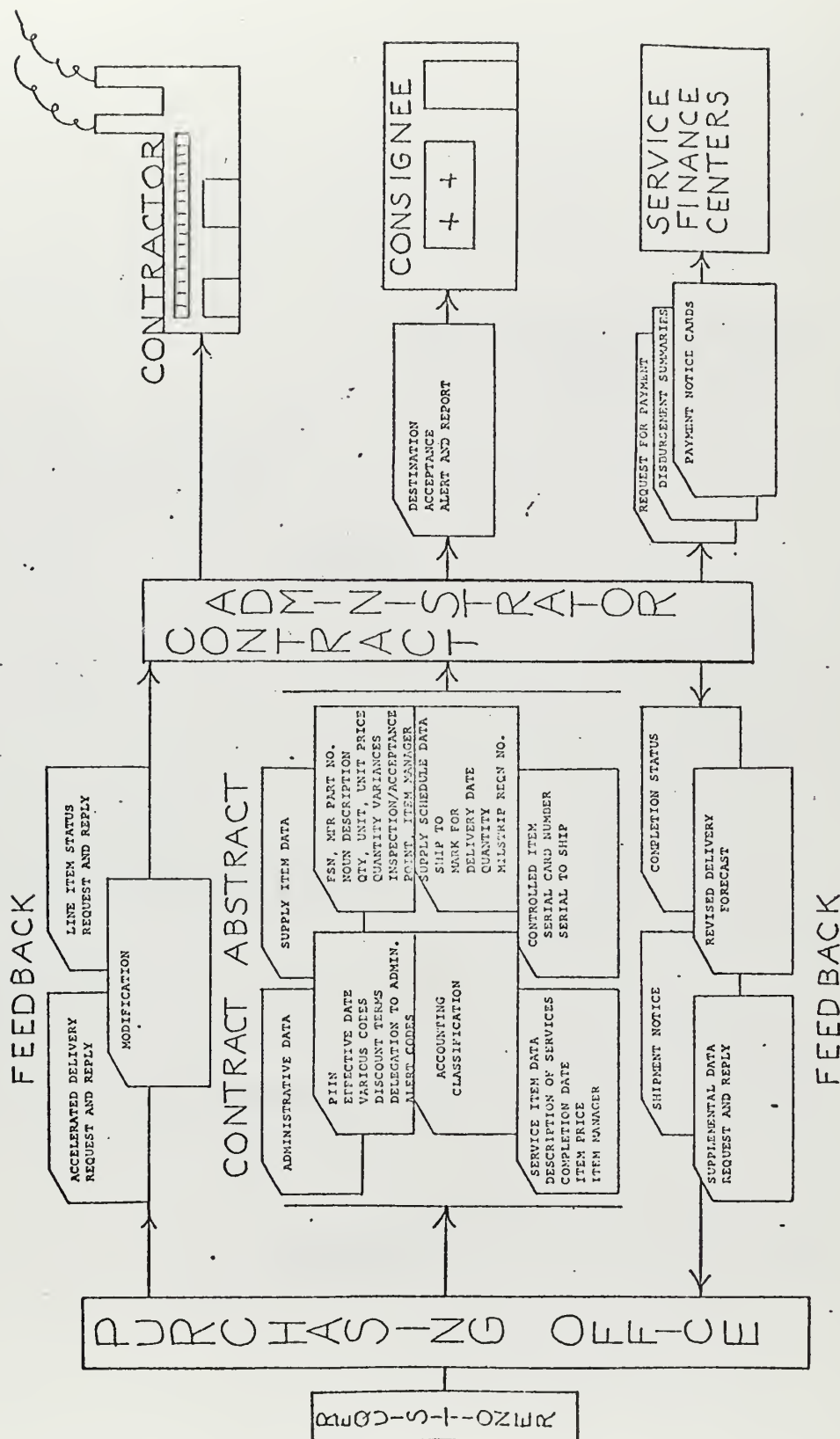
TRAINING REPORT

TRAINING	NUMBER OF PROCUREMENT PERSONNEL		
	TRAINED	REQUIRING TRAINING	IN TRAINING
1. DEFENSE SMALL PURCHASE COURSE	:_____	:_____	:_____
2. OTHER DOD PURCHASE COURSES	:_____	:_____	:_____
3. IN-HOUSE PURCHASE COURSES:			

SHORT TITLE	HOURS PRESENTED	
_____	:_____	:_____
_____	:_____	:_____
_____	:_____	:_____
_____	:_____	:_____
_____	:_____	:_____

4. OTHER PURCHASE COURSES:

LOCAL CLASSROOM (DESCRIBE ON REVERSE)   :_____

CORRESPONDENCE (DESCRIBE ON REVERSE)   :_____

IV. TRAINEES ON BOARD:

GS-1102-5   :_____

GS-1102-7   :_____

GS-_____ (FILL IN AS APPROPRIATE)   :_____

_____
(Signature)   (Date)
DIRECTOR

Appendix VI

WORK LOAD REPORTING

	Work in Process (PRs)7/	Completions (exclude cancellations) (PRs)	Man-hours expended by Method (M/Hs)	Cancellations (PRs)
a. Small Purchase				
(1) Automated				
(2) Manual				
b. Orders under BOA				
(1) Manual				
i. priced (Incl. prepriced) 8/				
a. $2500 or less				
b. More than $2500				
ii. unpriced 9/				
a. $2500 or less		10/	11/	
b. More than $2500				
iii. Other 12/	5/	5/		5/
c. Large Purchase Method 1/		2/		
(1) Formally Advertised	3/			
(2) Negotiated				
i. $2,501 99,999	4/			
ii. $100,000 and over	4/			
iii. Ammunition (SPCC only)				
d. Other purchase requests cancelled prior to method determination	5/	5/	5/	
e. Total, all methods				
f. Total technical referrals	6/	5/	5/	5/

1/ Includes requisitions to be processed as Indefinite Delivery Contracts and as letter contracts.

2/ Includes requisitions processed as Indefinite Delivery Contracts and as Definitized Letter Contracts.

3/ Includes Ammunition - SPCC.

Appendix VII

(cont.)

4/ Excludes Ammunition - SPCC

5/ Not Applicable

6/ Total of all purchase requests which have been recorded as receipts and which have been referred during the reporting period to the appropriate technical codes prior to completion. Point of Count is to be made at the time of referral of the purchase request.

7/ Number of purchase requests on-hand in the buying operations component, including technical referrals, at the end of the reporting period.

8/ a. A Priced order under a BOA contains a firm fixed price for each line item. The price is negotiated after receipt of the requirement in the purchase operation and is mutually agreed upon at the time the order is placed.

b. A Pre-priced order under a BOA contains a firm fixed price for each line item which is negotiated prior to receipt of a requirement in the purchase operation and governs for a specific period of time. This price is included in an Article Price List (APL), BOA Price Catalog, etc.

9/ An Unpriced order under a BOA does not contain a firm fixed price for each line item but allows a contractor to commence work price to negotiation and price definitization.

10/ A PR for an unpriced order is considered a completion after a price is mutually agreed upon and the paperwork leaves the buying operation for further processing.

11/ Includes issuing the unpriced order, analyzing contractor cost proposals, obtaining audits, conducting negotiations to price out the order, etc.

12/ Includes man-hours expended on work units other than orders under BOA, e.g., man-hours expended on negotiating the terms and conditions of the basic BOA: man-hours expended on negotiating Article Price Lists, BOA Price Catalogs, etc.

RESPONSIVENESS/WORKLOAD

Procurements Completed Within:

	1-3 Days	4-15 Days	Over 15 Days	Total Completed	In Process
BPA					
IMP Fund					
Del Orders					

	1-10 Days	11-20 Days	Over 20 Days	Total Completed	In Process
Pur Orders					

	1-30 Days	31-60 Days	61-90 Days	91-120 Days	121-180 Days	Over 180 Days	Total Completed	In Process
Formal Adv.								
2 Step								
Negotiated								
Under $10K								
$10-50K								
$50-100K								
Over 100K								

Appendix VIII

CLAIMANT PROGRAMS

CODE

A-1a	Airframes, Related Assemblies and Spaces
A-1b	Aircraft, Engines and Related Spaces and Parts
A-1c	Other Aircraft Equipment and Supplies
A-2	Missile and Space Systems
A-3	Ships
A-4a	Combat Vehicles
A-4b	Non-Combat Vehicles
A-5	Weapons
A-6	Ammunitions
A-7	Electronic and Communication Equipment
A-8a	Petroleum
A-8b	Other Fuels and Lubricants
A-8c	Separately Procured Containers and Handling Equipment
A-9	Textiles, Clothing and Equipment
B-1	Building Supplies
B-2	Subsistence
B-3	Transportations Equipment (Railway)
B-9	Production Equipment
C-2	Construction
C-9a	Construction Equipment
C-9b	Medical and Dental Supplies and Equipment
C-9c	Photographic Equipment and Supplies
C-9d	Materials Handling Equipment
C-9e	All Others Not Identifiable To Any Other Procurement Program
S-1	Services
ND	Actions Under $10,000

Appendix IX

NAVY MATERIAL COMMAND
MASTER PLAN DATA ELEMENTS

DD 350 Item No.	Primary Sort	Activity/Year/Contract No.	Contract No.	Southeast Asia	Contractor Identification	Office Location	Place of Contract Performance	Multi-Year Procurement	Walsh-Healey or Service Contract Act	Labor Surplus Area	FSC or Service Code (R&D, Service Contr & Constr)	System or Equipment (Weapons System)	DD Claimant Program	Proc. Programs (Grouping of DD Claimant Programs)	Coordinated Procurement	Synopsis of Proposed Procurement	Kind of Procurement Action - Letter Contract/Mod./Definitive Contract	Contract Placement (Method of Procurement)	Small Business	Negotiation Authority	Extent of Competition in Negotiation	Profit Negotiation (will DD Form 1499 be submitted)	Type of Contract	Value Engineering	Estimated Completion Date	Fractionation of Procurement Actions (16 breakdowns)	TOTAL SORTS
		2	5	6	7	7C	8			9	10A	10B	10C		12	13	14		15	16	17	18	19	20	21	22	24	
2	Activity/Year/Contract No.			✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	21
5	Southeast Asia	✓			✓	✓												✓	✓	✓	✓				✓		✓	9
6	Contractor Identification Office Location	✓					✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	20
7	Place of Contract Performance	✓					✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	20
7C	Multi-Year Procurement	✓		✓	✓					✓	✓	✓					✓		✓	✓	✓	✓		✓			✓	13
8	Walsh-Healey or Service Contract Act	✓		✓	✓																			✓				4
9	Labor Surplus Area	✓		✓	✓													✓							✓			4
10A	FSC or Service Code (R&D Services Contr & Constr)	✓	✓	✓	✓	✓		✓		✓	✓						✓	✓	✓	✓	✓			✓			✓	15
10B	System or Equipment (Weapons System)	✓	✓	✓	✓	✓		✓	✓		✓						✓	✓	✓	✓	✓			✓			✓	15
10C	DD Claimant Program	✓	✓	✓	✓	✓	✓		✓	✓	✓						✓	✓	✓	✓	✓			✓			✓	15
	Proc. Programs (Grouping of DD Claimant Program)	✓						✓			✓																✓	4
12	Coordinated Procurement	✓		✓	✓										✓	✓	✓							✓			✓	8
13	Synopsis of Proposed Procurement	✓	✓		✓											✓	✓	✓						✓		✓		8
14	Kind of Procurement Action - Letter Contract/Mod./Definitive Contract	✓	✓	✓	✓	✓		✓	✓	✓	✓							✓	✓	✓			✓	✓			✓	15
15	Contract Placement (Method of Procurement)	✓		✓	✓	✓		✓	✓	✓				✓	✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	20
16	Small Business	✓		✓	✓	✓		✓	✓	✓	✓			✓	✓	✓		✓		✓	✓	✓	✓	✓	✓		✓	20
17	Negotiation Authority	✓		✓	✓	✓		✓	✓	✓	✓			✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	20
18	Extent of Competition in Negotiation	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓		✓	✓	✓			✓	✓	✓		✓	20
19	Profit Negotiation (will DD Form 1499 be submitted)	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓		✓		✓	✓	✓	✓			✓	✓		✓	16
20	Type of Contract	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓			✓	✓		✓	19
21	Value Engineering	✓		✓	✓													✓	✓					✓	✓		✓	8
23	Estimated Completion Date	✓		✓	✓																			✓			✓	5
24	Fractionation of Procurement Actions (16 Breakdowns)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				22
TOTAL SORTS		27	16	19	20	14	4	13	15	14	15		10	9	18	16	14	19	15	6	11	9	8	27			319

KEY PUNCH GUIDE

PURCHASE STATUS KEY PUNCH GUIDE

Appendix XII

142

PURCHASE VENDOR ADDRESS LISTING

VENDOR CODE	VENDOR NAME	STREET ADDRESS	CITY	STATE	ZIP	TELEPHONE	TYPE
9A195	Tool House Co The	655 S Orcas	Seattle	WA	98108	RO21500	S
L1619	Tools & Gages Inc	2901 1st Ave S	San Carlos	CA	94070		S
T0856	Trace Elec Co	1524-12th	Seattle	WA	98122	3235548	S
07694	Traid Corp	P O Box 1839	Glendale	CA	91201		S

Appendix XIII

DAILY PURCHASE STATUS LISTING

DOCUMENT NUMBER	FOLDER NUMBER	PRI	DATE RECD	BUY CDE	RDD DMR	CUST CODE	REQ.FOR QUOTE P/O-CONTRACT#	OPEN CALL	VENDOR CODE	EDD	S M	S C	REF DEL
N0025102221022	038024	03	0223	21	0233	YCVA64	71Q1982	0237		000	0		
N0025102221030	037999	03	0223	22	0231	YD1062	02221030	COD	L0642	0231	0		G
N0025102221031	037998	03	0223	21	0231	YD1062	02221031	COD	L0787	0238	0		4

DAILY WORK IN PROCESS SUMMARY

	RECEIVED		QUOTE		AWARDS		CANCELED		OUTSTANDING
	D	C	D	C	D	C	D	C	
CONTRACTS BRANCH									
IG 1	10	67		225		108	1	16	292
IG 2	4	113	12	363	2	181		16	476
IG 3	24	46	1	66	7	107			112
IG 4	2	12	6	59	2	26			71
TOTAL	40	238	19	713	11	422	1	32	951
SMALL PURCHASE BRANCH									
IG 1	50	182	3	128	39	506	1	45	310
IG 2	114	212	22	199	32	503	4	40	411
IG 3	83	209	8	265	55	605		48	474
IG 4	33	53	4	84	26	234	1	7	37
TOTAL	280	656	37	676	152	1848	6	140	1332
OVERALL TOTAL	320	894	56	1389	163	2270	7	172	2283
SMALL PURCHASES	313								
LARGE PURCHASES	7								
TOTAL	320								

SOLICITATION METHOD CODES

Code	Method
W	Written
∅	Oral

Appendix XV

REFERRED/DELAY CODES

CODE	REASON
1	Document Referred to Originating Code/Activity
2	Waiting for Drawings
3	Referred for Evaluation
4	Referred for Funds
5	Referred for Specifications Changes
6	Extended Bid Opening
7	Pricing and Delivery Problems
8	Requesting Another Source of Supply for Originating Code/Activity
9	Referred to PSNS Design Department
A	Referred to PSNS Planning Department
B	Referred to PSNS Technical Department

Appendix XVI

INDUSTRIAL PROBLEM CODES

CODE	PROBLEM
A	Tardy Reply by Vendor
C	Scheduling Problems (Vendor has)
D	Difficulty Obtaining Material to Meet Specifications
E	Equipment Failure (Vendor)
F	Failing to Quote (Vendors are)
K	Taken Exception to Specs/Dely (Vendor has)
M	Material Failure (Vendor has experienced)
N	No Material Available from Suppliers
P	Referred Solicitation to his Production Dept. (Vendor has)
R	Referred Solicitation to his Engineering Dept. (Vendor has)
S	Strike
T	Transportation Problems
W	Referred Solicitation to Another Dept. with Firm (Vendor has)
Blank	No Problem

Appendix XVII

CANCEL CODES

1 Request of Requisitioner

2 Company Cannot Supply

3 Lack of Funds

4 Lack of Technical Data/Specifications

5 Contrary to Regulations

6 Crossed to FSN Requisition Forwarded into Supply System

7 . Other

Appendix XVIII

UNIFORM MATERIAL ISSUE PRIORITY

The appropriate Priority will be selected from the Issue
Priority Designator Table below.

ISSUE PRIORITY DESIGNATORS
("Force/Activity Designator" - "Urgency of Need" Conversion Table)

URGENCY OF NEED DESIGNATOR (UND)	FORCE/ACTIVITY DESIGNATOR (FAD)				
	I	II	III	IV	V
	ISSUE PRIORITY DESIGNATOR (IPD)				
DESIGNATOR A Emergency requirements for non-available material without which the Force/Activity concerned is unable to perform assigned missions or tasks.	01	02	03		
				07	08
DESIGNATOR B Requirements for non-available material which impairs the capability of the Force/Activity concerned. Missions can be performed, but with decreased operational effectiveness and efficiency.	04	05	06		
				09	10
DESIGNATOR C Material requirements needed on a more urgent basis than routine; e.g., immediate end use requirements for repair of collateral and administrative support equipment, to meet scheduled deployment, deficiencies in newly established outfitting or allowance lists.)	11	12	13	14	15
DESIGNATOR D Material requirements for initial outfitting and filling of allowances, scheduled maintenance, routine stock replenishment, repair or maintenance of supply systems stocks.	16	17	18	19	20

Appendix XIX

PURCHASE WEEKLY WORK IN PROCESS REPORT

BUYER CODE	FOLDER NUMBER	DOCUMENT NUMBER	OPEN DATE	DATE RECD	PRI	FSC	SOL MTH	CUST CODE	DMR	REF DEL	IND PBM	L C
21	024834X6576501077613			0113	08		W	70121	0120			3
	025404X7027301122460			0119	12		O	70273	0128			3
	028260N2012001247021N		0156	0138	07	STEA	W	ALLOW	0142	B		4
	029286N0025101520105		0189	0153	04	CLOT	W	SS599	0245			

NUMBER WORKABLE   - 8

NUMBER UNWORKABLE - 2

TOTAL BACKLOG   - 10

Appendix XX

PURCHASE STATISTICS DD FORM 1057

LINE NO.	ACTIONS	DOLLARS	LINE NO.	ACTIONS	DOLLARS	LINE NO.	ACTIONS	DOLLARS	LINE NO.	ACTIONS	DOLLARS
SEC A											
1	724	243,947	3			5	321	145,088	6	4,399	863,087
1A	9	16,145	3A			5A	319	141,010			
SEC B											
1A	329	26,312	3	3,672	460,953	8			14		
1B			4			9			15		
SEC D											
1	18	99,429									
3	216	161,002									

PURCHASE STATISTICS REPORT S&A 80 AUG 1970

LINE NO.	JULY ACTIONS	DOLLARS	AUGUST ACTIONS	DOLLARS
1	436	40,393	418	37,891
2	332	242,170	323	250,656

Appendix XXI

VENDOR SIZE CODE

<u>Code</u>   <u>Description</u>

L   For Large Business

S   For Small Business

Appendix XXII

PURCHASE TYPE CODE

Code	Purchase Type
M	Purchase Order (Open Market)
A	Blanket Purchase Agreement
P	Imprest Fund
C	Contract
F	GSA Federal Schedule
X	Other
Y	Other Inter-Governmental (DSA, VETS)
Z	Other Contracts (Orders under Contract)
D	Indefinite Delivery Contracts
S	Standard Form 44

Appendix XXIII

NEGOTIATION AUTHORITY CODE

Code	Authority (10 U.S. CODE)
1a	2304.(9)(01a)
1b	2304.(9)(01b)
1c	2304.(9)(01c)
1e	2304.(9)(01e)
02	2304.(9)(02)
03	2304.(9)(03)
04	2304.(9)(04)
05	2304.(9)(05)
06	2304.(9)(06)
07	2304.(9)(07)
08	2304.(9)(08)
09	2304.(9)(09)
10	2304.(9)(10)
11	2304.(9)(11)
12	2304.(9)(12)
13	2304.(9)(13)
14	2304.(9)(14)
15	2304.(9)(15)
16	2304.(9)(16)
7a	2304.(9)(17a)
7b	2304.(9)(17b)

Appendix XXIV

PURCHASE METHOD CODE

<u>Code</u>   <u>Method</u>

A   Advertised

N   Negotiated (No Competition)

C   Negotiated (Competitive)

Appendix XXV

TRANSACTION CODES

Code	Description
1	Initial Input
2	Request for Quotation
3	Completion of Order
4	Change in Information on Computer

Appendix XXVI

STATE/CITY/COUNTRY CODES

(Use Standard Area/State/Country Codes)

State	Code	State	Code
Alabama	AL	Montana	MT
Alaska	AK	Nebraska	NB
Arizona	AZ	Nevada	NV
Arkansas	AR	New Hampshire	NH
California	CA	New Jersey	NJ
Colorado	CO	New Mexico	NM
Connecticut	CT	New York	NY
Delaware	DE	North Carolina	NC
Florida	FL	North Dakota	ND
Georgia	GA	Ohio	OH
Hawaii	HI	Oklahoma	OK
Idaho	ID	Oregon	OR
Illinois	IL	Pennsylvania	PA
Indiana	IN	Rhode Island	RI
Iowa	IA	South Carolina	SC
Kansas	KS	South Dakota	SD
Kentucky	KY	Tennessee	TN
Louisiana	LA	Texas	TX
Maine	ME	Utah	UT
Maryland	MD	Vermont	VT
Massachusetts	MA	Virginia	VA
Michigan	MI	Washington	WA
Minnesota	MN	West Virginia	WV
Mississippi	MS	Wisconsin	WI
Missouri	MO	Wyoming	WY

Other Areas	Code	Other Areas	Code
Canada	CD	Bremerton	BR
District of Columbia	DC	Tacoma	TA
Vietnam	VN	Puget Sound (i.e., Seattle, other than Brem, TAC)	PS

Appendix XXVII

PURCHASE PROCESSING TIME REPORT

PURCHASE TYPE	NO. OF DAYS	WRITTEN SOLICITATION	AVE. NO. OF DAYS	ORAL SOLICITATION	AVE. NO. OF DAYS
H	0-5	2			
	6-15				
	16-30				
	31-60				
	61-90				
	Over 90				
Total		2	2.0		
L	0-5			5	
	6-15				
	16-30			1	
	31-60				
	61-90				
	Over 90			2	
Total				8	91.6
M	0-5	156		348	
	6-15	257		238	
	16-30	446		57	
	31-60	231		18	
	61-90	21		4	
	Over 90	9		7	
Total		1,120	23.6	672	11.2
O	0-5	3		1	
	6-15	6		1	
	16-30	2			
	31-60				
	61-90				
	Over 90				
Total		11	11.3	2	4.0

Appendix XXVIII

SUMMARY OF AWARDS BY GEOGRAPHICAL AREA

LOCATION	ACTIONS	DOLLARS
CA	218	262,292
KY	1	5
PS	988	416,220
TA	92	392,057
TOTAL	1,299	1,070,574

Appendix XXIX

PURCHASE PRICE HISTORY FILE

FSN

PART NUMBER	DATE	PIIN	QUANTITY	AMOUNT	VENDOR
20103172416	Sep 1970	71M3050	1	50	T1021
20104992477	Sep 1970	0167C014	3	50	61208

PART NUMBER

C1575A	Sep 1970	71M1489	2	69	T1017
C1575A	Sep 1970	71M1489	2	59	T1017

NOMENCLATURE

Blue Cheese Dressing	Sep 1970	71M0618	48	22	L2508
Boat Letters	Sep 1970	10470D0701	1	187	91373

SERVICES

NCR Mach Rental	Sep 1970	71F0317	1	261	T1125
Nitrogen Services	Sep 1970	71F0947	1	1,323	T0082

Appendix XXX

PURCHASE STATUS KEY PUNCH GUIDE

	SERV	DOCUMENT NUMBER			DEM SUF	PUR SUF	SERV	SUPPLE-MENTARY ADDRESS	S I G	PRI	DATE RECD PURCH	M. & S	FOLDER NUMBER
		REQUISIT'R	- DATE	SERIAL									
— P U 0													
01	02	03	04	05	06	51	07, 08		09	10	12	13	14

RDD/ DMR	DIST/ COG	FUND CODE ORIG	FUND CODE CHAR	UNIT OF ISS	QUANTITY		EXC FLD			EST. COST	BUY-ER	SOL MET
— 11	20	21	22	23	24					50	25	26

	PHC	STOCK NUMBER/PART NUMBER/NOMENCLATURE				STOCK NUMBER/PART NUMBER/ NOMENCLATURE (CONT.)
		FSC	FIIN	TSMC	ADDITIONAL	
— P U 1						
01	15	16	17	18	19	30

REQUEST FOR QUOTE/ PROPOSAL NUMBER	OPENING DATE		AMOUNT	AWARD DATE
— P U 2				
01	28	29	42	52

PURCHASE/CONTRACT/ ORDER NUMBER	CALL NUMBER	EST. DELY DATE	SHIP	VENDOR				NEG. AUTH	DEL MET
				CODE	SIZE	LOC.			
— P U 3									
01	32	33	34	35	36	37	38	39	40	41

	DELAY	PROB	CANC	CHANGE BLOCK	NEW INFORMATION	SEATTLE DELIVERY C/402.11 ☐ C/301.41 ☐ (Other than Imprest Fund)
—						IMPREST FUND: BREMERTON C/301.411 ☐
— P U 4						SEATTLE C/301.16 ☐
0:	44	45	46	47	48	

PURCHASE STATUS KEY PUNCH GUIDE
13ND NSC 4200/1 (Rev. 2-70)

Appendix XXXI

PURCHASE MANAGEMENT BY "ASPIRE"

While the previous system for reporting status of purchase actions was manual, ASPIRE provides the means to automate this information and produce important by-products. Outstanding orders are shown on a daily status report and weekly work-in-process listing. Completed actions are purged from a tape file monthly. Seven reports are generated from the purged data:

..A purged listing with all the orders placed the previous month by requisition number.

..Statistical reports for direct submission of the S&A 80 and DD 1057.

..A Processing Time Report reflecting the processing time for each purchase method.

..A Summary of Awards by Geographical area.

..A Vendor File in vendor code and vendor name sequence.

..A Price History printout which is a record of all buys for the preceding quarter over $50 value.

The process of getting all this data on a tape file starts when the requisition reaches the Purchase Department's input desk. At that time, a procurement clerk fills out a multi-page Purchase Status Key Punch Guide with the basic requisitions for a like item. She then forwards the folder to the appropriate supervisor who, in turn, assigns it to one of the buyers.

When the buyer receives the folder, he reviews the requisition(s) and indicates his code number and the solicitation method he intends to use. The first page of the key punch form is torn off and sent to key punch. The next day that requisition

Appendix XXXII

entry appears on the daily status listing. The second page of the key punch form indicating the quotation or proposal number or bid opening data is sent to key punch when that information becomes available.

When the award is made, the PIIN, call number, delivery data, vendor code, vendor size, vendor location, the purchase type, negotiation authority, purchase method, and the amount are sent to key punch on the third page of the form. Should there be any changes in the status of a particular requisition at any time after the first page is submitted, such as a company strike or cancellation request, the final or fourth sheet is used to correct the information on the tape file.

The initial results from these inputs are the daily status listing and status cards. Copies of the listing are sent to Puget Sound Naval Shipyard Supply Department, and to our status desk. Status cards that are unique in application are forwarded to the Puget Sound Naval Shipyard Supply Department for direct input to the Shipyard's automated industrial control system and to NSC's Outfitting Branch. UADPS AB cards are produced for all other activities.

AB cards are used to give the PIIN, call number, if any, and estimated availability date. Each Monday a weekly work-in-process listing is made in buyer code sequence. This listing is used by management to detect aging, to schedule work, and to evaluate buyer performance.

ASPIRE outputs are compatible with other UADPS programs in addition to furnishing customers with current information on their requisitions. Status cards are used to input requisition status on the MSIR (Master Stock Item Record) for stock replenishment items. Additional data necessary for supply

Appendix XXXII
(Cont'd.)

management reporting (NAVSUP 1144 report) are also extracted from information in the ASPIRE file.

The NSCPS Accounting and Disbursing Division uses ASPIRE to establish stock fund allotment commitments when a requisition is initially introduced on the master purchase file; and when the award is made, cards from the ASPIRE program serve as a cross-reference between the requisition and contract number. Subsequently, fund obligation cards are used to liquidate the stock fund commitment and to obligate the stock fund allotment. ASPIRE also assists the NSCPS Management Planning Division in analyzing and predicting manning and work levels, and in identifying customers and the volume of their business with NSCPS.

The purchase processing time report, which is made from the monthly purged tape, is used in evaluating over-all performance of the Purchase Department. The results are compared with those of previous months and with those of other activities, to indicate any trends. The report is broken down into purchase types; i.e., contracts, BPS's, delivery orders, etc. Contracts are broken down again into advertised, negotiated competitive, and negotiated non-competitive. All other purchase methods are divided to indicate whether they were purchased through written or oral solicitation. The report indicates by purchase type and solicitation method how many orders were placed within varying number of days. It should be noted that this report does not give data for one requisition. It gives the data for an order or folder which may have many requisitions in it.

Another ASPIRE output which speaks for itself is a statistical report S&A 80 and DD 1057 produced in required format. Since the S&A 80 is submitted quarterly, only the data

Appendix XXXII
(Cont'd.)

applicable at that particular point in time is printed. The report submitted the second quarter of the fiscal year, for example, would contain the data for the first and second quarters and summation of the first half of the fiscal year. The DD 1057 is ready for submission on a monthly basis.

The Geographical Area report is printed monthly. This report shows the awards (actions and dollar value) that were given to each state and to selected areas in the Puget Sound region.

A vendor file is another ASPIRE output. This file is a listing of the vendors with which the Purchase Department does business in vendor name and vendor code sequence. The address and telephone number, as well as business size, are also indicated on the listing.

At this writing, there are 3,885 vendors on the listing. This listing is used as a ready reference for buyers and procurement clerks in locating companies. It also aids in making the internal input into ASPIRE for the Price History Report. It should also prove halpful in finding vendor codes for MILSCAP reporting.

The Price History Report, which is updated quarterly, is a composite of a number of monthly purge tapes. It is hoped that this report will become an important tool. The history file gives the buyers a record of all previous buys of similar or identical items. This information is used in substantiating prices of current requirements. Besides showing quantity and unit price, it also shows PIIN and vendors of previous buys. It is divided into four segments for ease in input and usage. The first division, by PSN, causes no problems either for input or later use. The second major grouping is by reference number, whether manufacturer's drawing, part, etc., or by specification

Appendix XXXII
(Cont'd.)

or plan number. This is a difficult area in which to achieve uniformity of input, but has already proven workable. The third division, by nomenclature, is expected to be relatively small but is certainly the most difficult grouping to input and control. The final division lists various types of services.

ASPIRE application does not stop with our present system. The data contained on tape can provide the basic information needed for Resources Management System (RMS) reporting. The feasibility for automated MILSCAP reporting has already been studied and has excellent possibilities. Another possible use of ASPIRE is the printing of the Bidders' List and keeping it current. It has proved to be an excellent management tool to date, and additional system requirements may enhance its use in the future.

MSC Puget Sounds's Data Processing Department has forwarded ASPIRE program documentation to FMSO Oakland for review and possible reference in design of future UADPS programs. While the ASPIRE program does not automate the purchase action itself, it provides management with an effective tool for evaluating and controlling the purchase operation. Its statistical by-products have improved purchase reporting procedures; and last but not least, the timely availability of status on purchase actions provides an important service to our customers.

Appendix XXXII
(Cont'd.)

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